

The **Analysts Journal**

VOLUME 11 : NUMBER 3



JUNE 1955

Proceedings

Eighth Annual Convention
NATIONAL FEDERATION
OF
FINANCIAL ANALYSTS SOCIETIES



May 8 to 12, 1955



Hotel Commodore
New York

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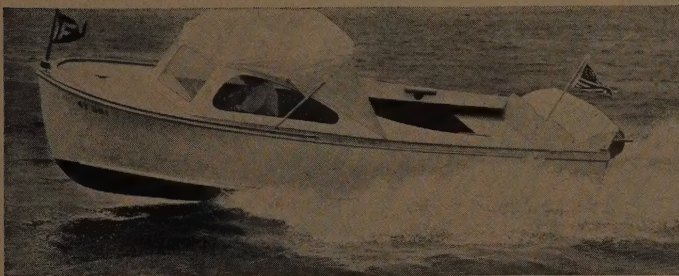
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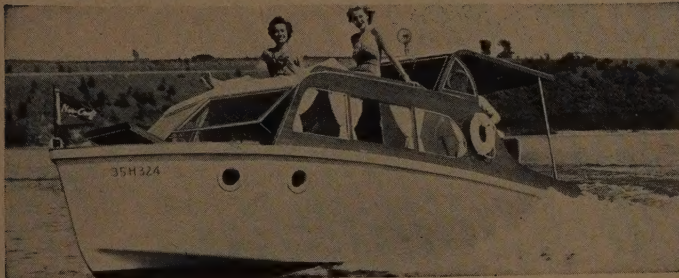
▼ Sportster, 12 ft. — Fleetcraft Corporation, Palmyra, N. J.



▼ Twin Motor Outboard, 18 ft. — Marscot Plastics, Inc., New Bedford, Mass.



▼ Nor-Craft, 22 ft. — Northwest Plastics, Inc., St. Paul, Minn.




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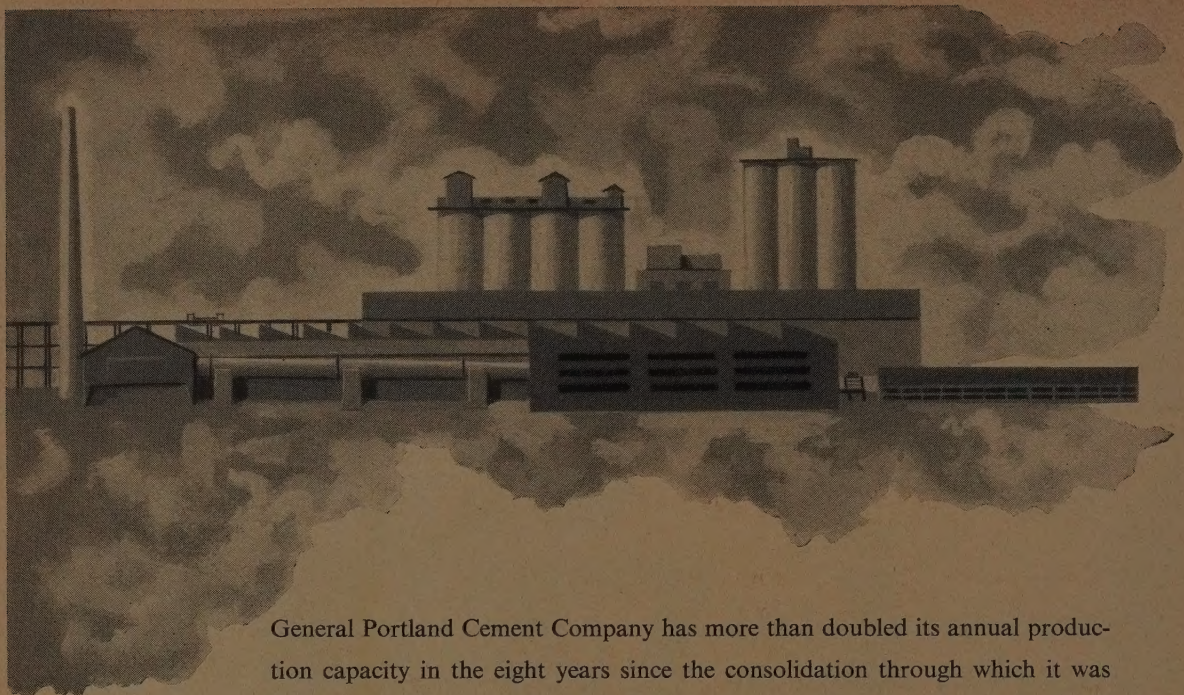
Highlights of the Year's Operations

Years Ended Dec. 31	1954	1953
Sales and Operating Revenues . . .	\$413,401,905	\$330,979,665
Net Income	\$ 14,794,326	\$ 12,585,688
Per share of common stock based on average number of shares outstanding	\$ 3.50	\$ 3.27
Preferred Dividends Paid	\$ 960,000	\$ 960,000
Common Dividends Paid	\$ 6,473,299	\$ 5,404,151
Per share—at rate of	\$ 1.75	\$ 1.75
Net Working Capital	\$112,206,211	\$113,489,590
Ratio of Current Assets to Current Liabilities	2.5 to 1	2.6 to 1
Fixed Assets, Less Depreciation . . .	\$130,776,657	\$111,034,389
Stockholders' Equity	\$179,960,386	\$159,133,638
Number of		
Common Shares Outstanding . . .	4,119,493	3,667,580
Number of Common Stockholders	13,697	9,876

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General Portland Cement Company has more than doubled its annual production capacity in the eight years since the consolidation through which it was formed. Starting in 1947 with five cement plants and a capacity of 6,635,000 barrels, General Portland, growing to meet demand, has constructed one new plant and made major improvements to the other five, thereby increasing annual production capacity to 14,600,000 barrels as of mid-1955.

General Portland's growth is indicated by the following financial figures:

SALES, EARNINGS, DIVIDENDS . . . a five year comparison

	Year 1954	Per Share*	Year 1953	Per Share*	Year 1952	Per Share*	Year 1951	Per Share*	Year 1950	Per Share*
Net Sales	\$33,443,700	\$16.08	\$30,487,300	\$14.66	\$29,435,100	\$14.15	\$27,121,000	\$13.04	\$24,413,700	\$11.74
Income before Provision for Federal Taxes on Income...	12,643,300	6.08	10,752,500	5.17	11,519,200	5.54	11,739,400	5.65	11,007,700	5.29
Provision for Federal Taxes on Income...	5,810,000	2.79	5,526,000	2.66	6,625,000	3.19	7,207,000	3.47	5,100,000	2.45
Net Profit	6,833,300	3.29	5,226,500	2.51	4,894,200	2.35	4,532,400	2.18	5,907,700	2.84
Dividends Paid per Share		1.65		1.50		1.50		1.50		1.50

*Based on 2,079,942 shares of the Company's stock outstanding after the 2 for 1 stock split effective January 24, 1955.



More complete information is available in our latest annual report, which we will be pleased to send at your request. Address General Portland Cement Company, 111 West Monroe Street, Chicago 3, Illinois.

On April 26, 1955 the Board of Directors of General Portland Cement Company declared a dividend upon its Common Stock of 35 cents per share, payable June 30, 1955 to stockholders of record at the close of business on June 10, 1955.

HOWARD MILLER,
Treasurer

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The Analysts Journal

Message from the New Federation President

JUNE 1955

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NUMBER 3

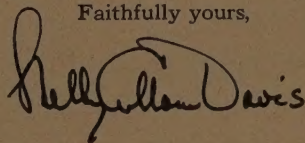
ON SUNDAY AFTERNOON, MAY 8th last, some 60 representatives of 16 constituent Societies of the National Federation, assembled in a chamber of the Hotel Commodore in New York, voted to accept the report of the Nominating Committee headed by former President Richard W. Lambourne of San Francisco. Less to my surprise than to my pleasure and pride, I became President-elect of an eight-year-old organization comprising nearly 4,500 members.

The National Federation, whose birth I attended in downtown Manhattan on May 1, 1947, has come a long way from 1947 to 1955. Its influence has been felt—and felt strongly—in corporate reporting and other fields of finance throughout the land. The Federation's Conventions are increasingly attended, as top forums of American business and finance. THE ANALYSTS JOURNAL is a "must" in financial literature. The Directory is most useful. The proposed annual seminars and professional status of analysts through certification offer possibilities for even broader service in the future.

It has been the custom of Federation Presidents to visit each member Society during the year and acquaint its officers and members with the aims and aspirations of the organization. For me this will be a pleasant tour of duty; for there is no finer nor more intelligent group in America than the financial analysts.

And who are the financial analysts? They are a professional group, independent and unprejudiced; they are careful, thorough, and judicious in their work; they are modest and self-critical; they are co-operative, public spirited, and progressive. So for many years has said the Code of Ethics of the New York Society, and, from my experience, this Code applies universally. For this reason I am looking forward to meeting all members and anticipate my term of service to the Federation with gratitude. It will be difficult to live up to the high standards set by my predecessors. You shall have my efforts, and with your help I hope to succeed in bringing about a year of progress and accomplishments to the National Federation of Financial Analysts Societies.

Faithfully yours,



Fabian Bachrach

SHELBY CULLOM DAVIS

THE ANALYSTS JOURNAL is published five times a year, in February, May, June, August, and November, by The National Federation of Financial Analysts Societies, Inc., a nonprofit membership corporation devoted to the interests of those engaged in investment management and, more specifically, in the profession of security analysis. Publication office: National Federation of Financial Analysts Societies Headquarters, Room 903-C, 270 Park Avenue, New York 17, N. Y. Re-entered as second-class matter March 4, 1953, at the Post Office at New York, N. Y., under the Act of March 3, 1879.

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EDITORIAL COMMUNICATIONS AND ARTICLES FOR PUBLICATION should be addressed to Helen Slade, managing editor, 400 East 57 Street, New York 22, N. Y. Neither the Federation nor the editorial staff is responsible for the facts or opinions contained in articles appearing in THE ANALYSTS JOURNAL.

ANNUAL SUBSCRIPTION price for five issues \$5; foreign subscription \$5.50; single copies are \$1.50, foreign \$1.75. Checks should be drawn to the order of THE ANALYSTS JOURNAL and forwarded to Room 903-C, 270 Park Avenue, New York 17, N. Y.



Photo by Jean Raeburn

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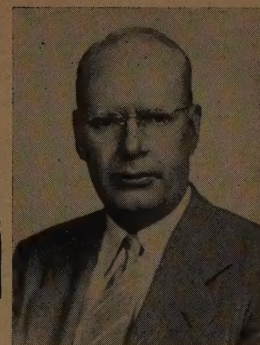
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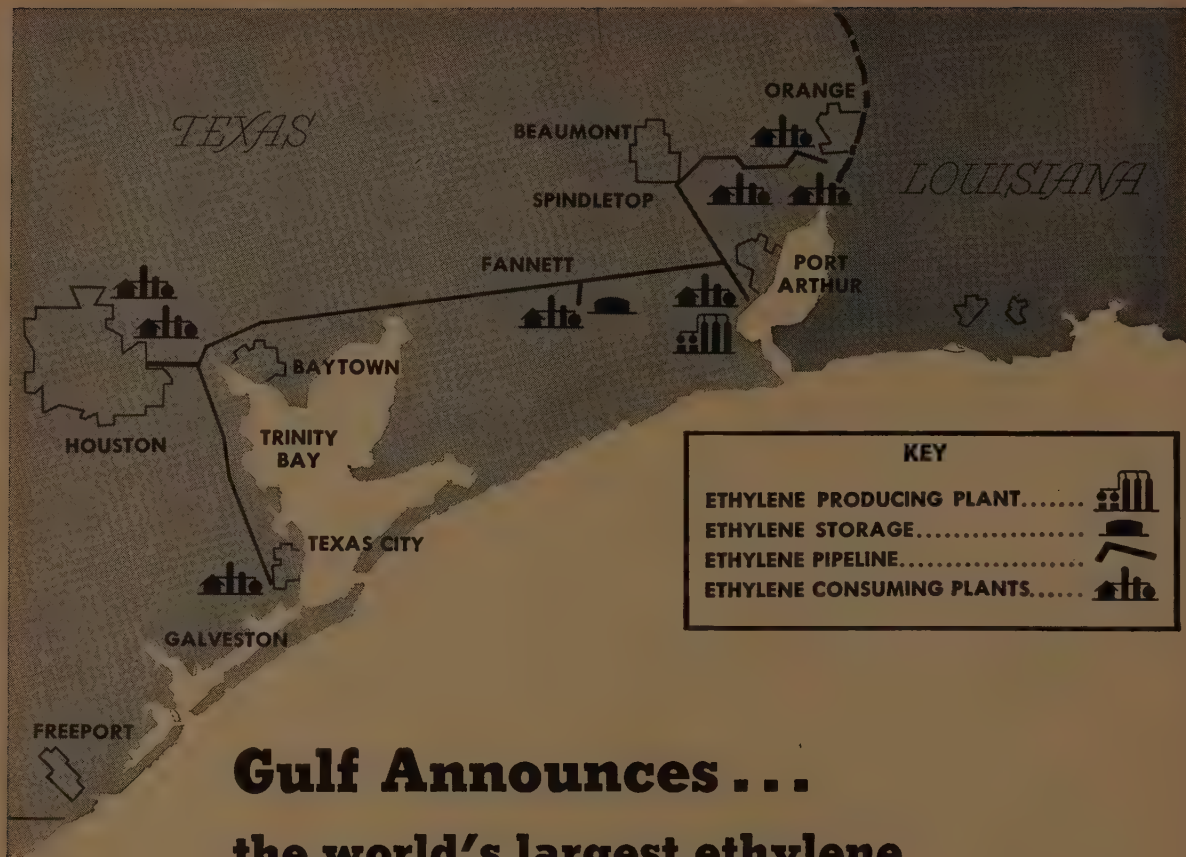
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Opening Meeting

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Welcome Address

SHELBY CULLOM DAVIS*

LADIES AND GENTLEMEN, may I call to order this Eighth Annual Convention of the National Federation, and may I assure you how much we have eagerly anticipated this opportunity of extending to you a warm New York welcome. Somehow or other the impression has gained currency that the sidewalks of New York are a cold and cheerless place. That may be true about sidewalks—in fact, any sidewalks anywhere.

I am sure you will find the people of New York warm and friendly since they in their turn have come from Dallas, Boston, Philadelphia, the Twin Cities, San Francisco, Richmond; in fact all of the 16, and since yesterday afternoon 18, member cities of the Federation. I, who came to New York from Illinois by way of Philadelphia, am, I hope and trust, a friendly example.

But you have a far better example on this platform, our fellow member who, by our great good luck, was transported to New York from her native San Francisco, and who is chairman of the Committee on Arrangements and who has toiled long and so successfully for this Convention. May I salute her and ask her to rise so that you may greet her. Helen Slade.

FINANCIAL TRADITIONS OF NEW YORK

Now, in addition to her many other talents, Helen Slade is the managing editor of *THE ANALYSTS JOURNAL*, of which I trust you are all avid readers, and her sketch in the current issue, of the financial traditions of New York from the famous buttonwood tree to the present, is both succinct and so superb that any gilding on my part would overpower the lily.

New York then, I hope you will agree, is American. Sometimes there are those who entertain doubts. It is the recipient of our proudest financial traditions and the torch-bearer of our progressive American capitalism which is re-making the land and developing the highest standard of living ever enjoyed by peoples in the world.

*Convention chairman.

We are going to look into this standard of living at this Convention. I am not going to bore you with statistics because, though I was brought up as a statistician, sometimes I now regard statistics a little bit like the Bikini bathing suits that the ladies are now wearing. What they reveal is interesting, but what they conceal is vital.

VARIETY OF SPEAKERS

You will be interested to learn that there will be eight forums, three management conferences, four general meetings, including two luncheons and a dinner, fourteen field trips, a total of twenty-nine items, plus one—that informal dinner tonight which I hope you will all attend. You have all read the program and you know the variety of our distinguished speakers and their fascinating subjects. We may be living in a “do-it-yourself” age, but all this is being served to you for the asking and for that slight registration fee.

LIVING IN A GLORIOUS ERA

We are living in a glorious era, ladies and gentlemen. As a Nation, we seem to have cast aside our latent doubts and fears concerning our future. Confidence is in the air. So is money, and what we now call discretionary purchasing power. In fact, one Broadway wit has observed recently that, if you do not keep the windows closed these days, the money just floats in and settles over everything like dust. With that warning I expect to see the windows of the Commodore the widest open of any in town.

We hope you will find time to visit that crooked lane that leads from the cemetery to the river, called “Wall Street,” during your stay. We hope you find time to have a good time.

New York is not only money, fashion, publishing, music, almost every corporate activity you can conceive of, but also entertainment of all kinds. We who are New Yorkers, either by transplant or native, believe it is not only a good place to visit but also, miraculously enough, a good place in which to live; and we hope you do, too, so you will re-

Real Estate Is Everybody's Business

WILLIAM ZECKENDORF*

IT IS A DISTINCT PRIVILEGE for me to be invited to be among your guest speakers, and I thank you for it. I will endeavor to contribute a word or two on the general subject of "Real Estate Is Everybody's Business." It will, I think, interest you to have me read a recapitulation of new office buildings that have been erected in the City of New York, Island of Manhattan, since 1947.

NEW OFFICE BUILDINGS

Buildings completed, since 1947, competitive and non-competitive, total 49, with a net square-foot rentable area of 10,928,000. Buildings now under construction, all of them competitive, are eleven in number with a total area of 3,909,000 square feet.

Buildings projected, plans filed but construction not started, all of them competitive, eleven of such type with a total area of 4,569,000 square feet. Buildings projected, plans filed but construction not started, all of them non-competitive, three, with a total of 771,000 square feet. This makes a grand total of 20,177,000 square feet, plus at least 10% additional of which I am personally aware, although we are not necessarily going to be the builders, but which we have something to do with. This 10% has not been stated to the public, and is not known even to the statistician.

Now, this aggregate, without including the 10% that, as I say, has not been disclosed, is 20,177,000 square feet—this is just a little more office space than exists in big Chicago.

New York was considered a pretty good office town before 1947! What is even more remarkable is that the City of New York continues to be the only city in the entire 48 states that is construed by its legislators as being in a status

*President, Webb & Knapp, Inc.

of emergency for inadequate free market for the leasing and renting of space. This is the only city in the United States with office-space rent laws comparable to the residential, notwithstanding enormous increase of availability.

Now, this is a very significant problem. I wish I had the analytical power that lies before me here to give you the solution to it. Why is it that this city is so short of office space, and has built such a huge amount while the demand continues more strongly than ever?

HAS BEEN DECENTRALIZING

In this city we find a very interesting situation. New York has been decentralizing for a long time. I have heard dire reports and predictions about what is going to happen in New York, about the office space that is going to be removed from the city and follow the trend of industrial space that has already left New York.

SERVICE INDUSTRIES

On the other hand, we are told of the great industrial power of the city; but it is not really industrialized in the sense that truly industrialized cities are. We have mostly service industries, industries related to the main business of this community, and that main business, broadly speaking, is at the executive level.

New York is the executive-office center, the finance center, the idea-exchange center, the mart, the advertising, sales, and style center, the theater and art center, the music center, the convention and sports center. As industry decentralizes, apparently it becomes all the more important to centralize an executive office, a distributive point, and an exhibition point at that central showplace of the Nation known as New York.

What a remarkable thing it is for New York to be able to say that the more plants that go to Greensboro, the more

(Concluded from preceding page)

turn to your homes happier, wealthier, and wiser, and with these words ringing in your ears, "I Love Gotham in the Springtime."

Now I am going to have the great pleasure, after welcoming you here, of turning this meeting over to my friend, the vice-president of the National Federation for Boston, and now its newly elected executive vice-president, Mr. Robert J. Wilkes, who will introduce our speakers.

* * *

Chairman Wilkes: I am sure that New York has prepared a new high in this marvelous series of annual Conventions which we have had. We are anticipating it with

great pleasure. At this time I just want to call attention, however, to the fact that next spring, May 20 to 25, Boston is going to try to do an equally good job.

Our speakers certainly need no introduction to any group of financial people, least of all to us analysts. Therefore, I am going to take none of your time in recitation of their achievements. It gives me great pleasure to introduce Mr. Roy Reiersen, vice-president and economist of the Bankers Trust Company.

Our other speaker, Mr. William Zeckendorf, is certainly one that we are most fortunate to have on our program. He is going to talk to us about real estate being everybody's business. It gives me great pleasure to present to you Mr. William Zeckendorf.

that go to Keokuk, the more that go to Fontana, the more that go down to Louisiana, the better we like it! We are going to find the showrooms of such companies, their executive offices, their advertising agents, ranging somewhere along Seventh Avenue or Broadway or Madison and Fifth Avenues in the office district, because all know that this is the mart. In short, the final conclusion is that we have lost our industrial activity at 50 cents a square foot and recaptured office space at \$5 a square foot!

I will give you a recent illustration. The National Biscuit Company, which occupies even now a large industrial area on the west side of Manhattan in the thirties, in which the company has a tremendous investment in plant, finds that New York operations for an industrial business like theirs simply does not pay, and so they are moving to Jersey with part of the business, and elsewhere with other parts.

True, this occupancy does not cost as much as 50 cents a square foot because the plants are old; they are written off. They are perfectly modern in every respect except that they are multiple-story, and occupancy costs as such must be very, very low. Yet at the same meeting when they resolved to move their industrial activity out of the city, they made a decision to take 150,000 square feet of space at \$5 a foot on Park Avenue between Fifty-fifth and Fifty-sixth Streets, indicating that they did not want to lose that remarkable contact that is available only in a metropolitan city like this.

I am not here to try to discuss New York as such. My topic is "Real Estate Is Everybody's Business," but it is important to learn a lesson from what takes place here.

I have heard of certain concerns that had contemplated moving, and one that did move—of course, quite a few of them moved their office space out, but obviously it hasn't made much of a serious dent in our situation.

The head of one such company asked me what I thought of this move—from Manhattan to a beautiful place in the suburbs.

"Well," he said, "we are very comfortable up there."

I said, "I bet you are sitting in the middle of a nice green plot, and your executives are coming to work in tweed jackets and station wagons." I said, "What business are you doing today?"

He said, "Something under a billion dollars a year."

I said, "What business were you doing when you joined the firm?"

He said, "Perhaps \$15 million."

I said, "I guess I can let you answer the question. Would you have moved to the country in the middle of a grass plot when you were doing \$15 million and aspiring to do a billion?"

He said, "No."

I said, "I won't go any further into the subject. You have come of age."

A little later I happened to run into two or three other executives of this firm, highly responsible men of position, and they very confidentially told me that they felt it was not all that it was painted to be—sitting in the midst of a green plot and going to work in a tweed jacket. A new

philosophy, a new type of thinking—something took place. There was a glandular transition when they moved off Manhattan Island, away from the heat of business and the activity and the vitality and the spirit of drama that can only be felt in these pavements here, and moved to this sublime virgin Eden.

New York has found its destiny. It has defined for itself what part it can play in the national orbit. It has made the most remarkable inroads to overcome the adverse effect of decentralization. That possibility is available to every other community, and I want to say that all other communities are susceptible to this disease of attrition and rotting out of the core, but they cannot always use the same answers as New York.

ANSWERING THE CHALLENGE

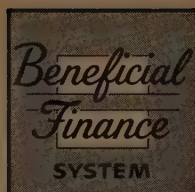
They have to determine what they have to offer in the local or regional or the national community, and set out to accomplish what they can do best. The New York pattern will not necessarily suit Cincinnati. And the Chicago pattern will not suit Los Angeles, or the Houston pattern Atlanta. But I must say that the problems that confront every community, and this is why real estate is everybody's business, are the problems of answering the challenge of decentralization, by some means through which recentralization can be achieved.

How can you reattract? What has your community got at the central core that can bring back the property values, the tax ratables, the attractions that will have been lost if something is not done about the situation?

No general answer is any good except the broad statement that we know that, however decentralization might take place, we are only experiencing what history has been doing since before recorded times. Every man and every woman in this room is the product of decentralization from some place in Europe—some from France, Italy, Germany, England, Ireland, everywhere. That does not mean that we don't have remarkable cities abroad that have perhaps more vitality, more virility than they ever had in recent times because they have been able to figure out for themselves certain things they can offer.

And from the high level called "metropolis" you can get down to the communities of any size that are affected by decentralization. If they can find out what they have to offer in their area, and then go about the business of offering it in the best way, they will not have to fear the catastrophic results that decentralization would surely have in store for them if they do not think and then act.

Hence, whether you live on the periphery, or whether you live in the center, you are interested in real estate everywhere, in every community, because the decline of centralization means the raising of taxes in the outer area. It means a total change in the way of communal life. No one can afford to disregard real estate whether he be a person who says, "I don't own real estate. I only pay rent," or a person who owns real estate. Don't fool yourselves. Your very job is at stake because business has a funny way of moving from communities that don't take care of themselves, and thus everybody in this room and everybody in this county is in the real estate business.



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Reflections on the Business Outlook

ROY L. REIERSON*

FOR MANY MONTHS the business news has become progressively more cheerful and encouraging. About a year ago, indications began to accumulate that the sag in business activity then under way was bottoming out at a level no more than 5 to 10% below the 1953 peak.

With the passage of time, furthermore, it became increasingly clear that the economy was not stagnating at that level, as some observers had feared might happen, but was gathering strength for a new and vigorous upturn. Today, the 1953-54 decline has been substantially recouped, the economy continues to expand, and all signs point to 1955 as a banner year.

Even more impressive than the rapid business recovery, however, is the accompanying improvement in business sentiment. In fact, while the rise in economic activity may become more temperate as more and more industries approach capacity operation, business confidence seems to be increasing now and is probably at an all-time high.

This is in marked contrast to the early part of 1953, when the economy was moving toward new peaks but businessmen generally—and accurately—expected some downturn later in the year. Today, those who initially could not find the dynamic forces required to stimulate renewed economic expansion have relearned the practical difficulties encountered in the uncertain art of business forecasting, while those who admitted the reality of the recovery but questioned its duration have gradually found their doubts erased by the plethora of good business reports.

In such an environment, there is a strong temptation to share in the growing expectation of unlimited prosperity, which often heralds the final sweep of a boom. The financial analyst, concerned with fundamental values, is most interested in arriving at a balanced and dispassionate appraisal of the economic outlook, swayed neither by uncritical exuberance nor by an emotional distrust of good business in principle.

Obviously, it is impossible to forecast with assurance how long business will continue to advance, the heights it will reach, or the nature of any decline that may occur, but, by examining the factors that support the current business recovery, it is possible to place the upturn in its proper setting, to appraise some of the elements that give it strength, and to consider also the areas of possible weakness. Thereby, we may be able to develop some reasonable guesses for the remainder of 1955 and perhaps venture some thoughts on the problems that might confront the economy as time moves on.

EXPANDING ECONOMIC ACTIVITY

By and large, the current economic expansion may be described as a "normal" business recovery. The pace of

the upturn, though impressive, is comparable with our experience in other periods of recovery from modest business setbacks, such as in 1924, 1927, and, more recently, 1949.

The fact that the economy is again at the peak levels of mid-1953, therefore, reflects largely the moderate character of the 1953-54 downturn. Also, some two years have elapsed since the economy last operated at these levels, and during this time productive capacity, population, and markets have grown. Consequently, the rapidity of the current recovery movement in itself is not particularly disquieting. However, the upturn has already had some repercussions in commodity prices and interest rates.

Production and Employment. The Federal Reserve index of industrial production in April 1955 is estimated to have reached the peak of 1953, when the index registered 137 (1947-49 = 100). Output of durable goods, which dropped rather substantially in the 1953-54 business decline, has advanced sharply in recent months, but is still below its 1953 record. Nondurable goods output, on the other hand, has been less volatile and is now running at or near the all-time high mark.

Furthermore, some important basic industries, such as steel, automobiles, and construction, are operating fairly close to capacity rates. Although no major bottlenecks have appeared as yet, any further rapid increase in production from current levels may meet with greater difficulties than in the recent past.

Some slack probably still remains in the labor force. Unemployment is currently estimated somewhat above 3 million, or 5% of the labor force. This is about twice as high as two years ago, when the economy was at its peak.

The slack is probably not so great as the broad statistics would suggest, since the number of unemployed includes not only frictional unemployment, that is, persons in the process of changing jobs, but also unemployed in distressed localities, persons of uncertain productive potentialities, and those who may not actively be seeking employment. With these adjustments, unemployment is perhaps less than half as large as indicated by the aggregate figures, or about 2% of the labor force, and may be expected to decline further in the coming months.

Commodity Prices. The impact of the business recovery has been felt also in the prices of industrial commodities, the more so as economic expansion in the United States has been accompanied by a broad and continuing boom in Western Europe. In fact, for the first time in many years, both Western Europe and the United States are simultaneously enjoying high and rising levels of business activity. As a result, world supplies of commodities have experienced the pressure of growing demands, and some spot shortages have begun to appear.

So far, increases in commodity prices have been fairly

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moderate, and the effects on the price level as a whole have been about offset by persistent weakness among prices of many important agricultural products. Some industrial raw-material prices, however, have stiffened perceptibly, and present prospects point to further rises in the period ahead. At the same time, another round of substantial wage increases is in the making throughout United States industry, which will almost certainly add to the upward pressure on the price structure in general.

Interest Rates. Finally, the growing momentum of business activity has been accompanied by expanding demands for credit and higher interest rates. Indeed, since the upturn has been especially pronounced in the automobile market and in construction, both of which entail the heavy use of credit, the rise in installment and mortgage debt has been particularly sharp. Bank loans to business, however, have also shown strength, and demands for loans on securities have increased conspicuously.

At the same time, the monetary authorities have shifted their policy from one of active credit ease, which was pursued until late last year, to one designed, at first, to take the slack out of the banking system and, more recently, to exercise a mild degree of credit restraint. As a result, bank reserves are not so freely available as they were a year ago, and most classes of interest rates have firmed quite noticeably, especially rates on short- and medium-term securities. These securities are generally described as bank-type investments.

Credit continues to be available in large amounts, but there are some signs of less aggressive lending policies. Some mortgage lenders appear less eager to make thirty-year loans with little or no down payments; a modest tightening here might help to restrain overborrowing and overbuilding later in the year.

Also, bank lending is probably on a somewhat more selective basis than some months ago, when credit was readily available to practically all prospective borrowers. However, the adjustment in bond and money markets has been orderly, and money rates are still low in comparison with those of the spring of 1953, when the "money squeeze" was approaching.

Furthermore, the financial community has become more familiar with the workings of a flexible credit policy, and views the future with greater equanimity and less apprehension than two years ago. The authorities, in turn, have been cautious and adroit in exercising their powers of credit control and have been careful not to disturb the financial markets.

Obviously, credit policy continues to be shaped in the light of economic developments. Consequently, though some further tightening of credit cannot be ruled out, a recurrence of the broad unsettlement and near panic in bond and money markets witnessed in 1953 may be less likely at this time.

CURRENT STRENGTH IN BUSINESS

An encouraging feature of the current business upturn is that it reflects largely the initiative of private demands rather than enlarged Federal spending, and is being sus-

tained without the stimulus of huge deferred demands of consumers or business, or of war scares, as was the situation through most of the recent postwar decade.

Assuredly, Government policies provided some assistance in moderating the 1954 downturn and encouraging the ensuing recovery: The tax reduction early last year helped maintain disposable income and encouraged consumer spending; the more flexible tax treatment of depreciation gave some incentive to business spending on plant and equipment; the Housing Act of 1954 appears to have sparked an upsurge in residential building, which is still under way. Credit policy also made an important contribution: The monetary authorities, by keeping credit readily available, averted a spiral of credit contraction; as a result, businessmen were not put under pressure to liquidate inventories, and conditions in the investment market in 1954 remained favorable to long-term borrowers, which in turn contributed to the strength in building and construction.

However, the Administration did not accept the recommendations of some economists for a big increase in Government spending; economic recovery actually set in while Treasury outlays were still on the decline and the budget deficit was being reduced. The basic strength in business has come from an expansion in consumer demands, especially for automobiles, from mounting building and construction activity, and from the end of inventory liquidation. Furthermore, these and other factors are still vigorous and are likely to continue to impart strength to business activity, not only for the remainder of this year but possibly into 1956 as well.

Consumer Spending. The remarkable success of the automobile industry with its new models last autumn was among the first symptoms of the business upturn. Furthermore, the automobile market has remained very strong so far this year, and, despite the prospects for a lakedown in the latter part of the year, passenger-car production in 1955 seems likely to approximate the 6.7 million units of 1950, the previous peak.

While buying of automobiles has contributed importantly to heightened business activity, consumer spending on most products in general has quickened. The public continues to display confidence in the future, and is willing not only to spend a larger share of its income but also to increase its purchasing power by going into debt in a very substantial way.

Personal income is at record levels and is likely to continue to advance with the rise in hours of employment already under way, and the mounting pressures toward higher wage rates. Also, industrial activity seems to be approaching a level that will require adding workers to the payrolls. If we succeed in avoiding sustained or protracted work stoppages in basic industries in 1955, the outlook is for a continued high level of consumer spending for some time ahead.

Building and Construction Activity. Another major support to business stems from building and construction. The tremendous strength in residential building in the second half of 1954 has persisted so far in 1955 and has surprised practically everyone. In part, this may be explained by the

record number of births and the growth in family size. Other factors, such as the effect of easy credit under the recent Housing Act, the movement of population to the suburbs, and the increasing number of separate households, are more difficult to appraise, but, judging from current observation, these pressures are indeed formidable and pervasive.

However, new houses are now being started at a rate perhaps twice that of family formation, and, as the year progresses, some easing in home building is a likely development; in fact, some leveling off may already be under way. At the same time, the continuing high level of residential starts, together with the course of new contracts, suggests that the decline in home building is not likely to be rapid.

For nonresidential construction, on the other hand, the recent rise in new contracts presages a higher level of activity in the months ahead. Commercial construction is soaring, and industrial construction is again moving upward. Last, but certainly not least, is the steady rise in state and local construction, which has persisted over the years and shows no signs of abating; in fact, the backlog of public works is still very large.

Business Spending on Plant and Equipment. One of the most significant items of business news in recent weeks was the result of the latest McGraw-Hill survey of business intentions regarding plant and equipment expenditures, one of the key factors in our economy. Such expenditures, which had been sagging after reaching their 1953 peaks, had previously given signs of leveling off; the accumulating evidence now indicates that their direction once again is upward, carried on a broad wave of business confidence.

In fact, business seems not only to be planning to make larger outlays during the course of 1955, but also to maintain a high level of plant and equipment spending in 1956. Such evidence, though tentative, may well be regarded as an important clue to the business outlook beyond the turn of the year.

Business Inventories. So far this year there has been no important accumulation of inventories. This, however, is not unusual.

The course of inventories tends to lag behind production and business activity. Inventories continued to increase in 1953, apparently involuntarily, after the peak of business activity had already been passed, and continued to decline late in 1954, when tendencies toward accumulation seem to have been offset by rising sales.

There is little doubt that business policies have shifted from inventory liquidation to accumulation, although any appreciable increase in stocks has been largely prevented by the vigor of the economic recovery. The expansion in production and sales suggests that businessmen will continue their efforts to increase inventories in the coming months, and this should be an important source of demand in the economy later in the year.

Government Spending. The reduction in Federal expenditures initiated in 1953, which was a factor in the business downturn at that time, has about reached its end,

at least for the present. Furthermore, procurement for national defense has been stepped up from the low levels of last year, thus supporting the prospects for activity in the metal and metal-fabricating industries.

To some extent, of course, trends in defense spending are affected by the international situation, which currently is confusing and ambiguous; rising hopes for peace vie with signs of increased alarm. However, even a major relaxation of tensions is not likely to be followed by large cutbacks in Government outlays, except over a longer period of time, although anticipations of cutbacks might have more immediate repercussions on business planning. An intensification of international troubles, on the other hand, may well lead to a fairly rapid increase in Government procurement as well as in private demands.

APPRAISING THE OUTLOOK

It is evident that the current rate of business activity rests on a fairly substantial foundation and is likely to be well sustained for some time ahead. Underlying trends are still strong, and the economy appears well on its way to new peaks of industrial production and gross national product. However, it is doubtful whether expansion can persist much longer without greater signs of stress beginning to appear. The slack remaining in the economy has been significantly reduced, and this suggests that the pace of expansion is likely to slow down in the months ahead.

New Records for 1955. Opinions of economists regarding the second half of 1955 are largely divided between those who expect some further rise in business activity and output by the end of the year, and those who foresee a leveling off, with perhaps some easing developing in the last few months of the year. The shades of difference, however, are relatively small, and the controversy is more apparent than real. By and large, the economic forecasters are in general agreement that business will be brisk and active throughout the balance of 1955.

Some components of the business picture will operate at lower levels in the latter part of the year. Automobile production, for instance, is hardly likely to remain at current levels much longer. In fact, selling is already becoming more competitive, and the seasonal downturn in the third quarter of 1955 may be fairly substantial.

This might well have a depressing effect on other industries, even though the major indicators of aggregate economic activity should not be importantly affected. However, a development of this kind, largely seasonal in nature, is not by itself likely to initiate any pronounced decline in business, and a renewed upturn in passenger-car production is in prospect in the final part of the year, when the 1956 models are to be introduced.

New housing starts, as already noted, also may be expected to back away from present high levels; they are currently running close to the 1½ million annual rate, but a guess for the year as a whole suggests a total of around 1.2 or 1.3 million units, implying a fairly sizable reduction in the months ahead.

Many other segments of the economy, on the other hand, are still in the expanding stage: Total consumer spending, business investment in inventories and in plant and equip-

ment, nonresidential construction, and state and local outlays are all moving upward. Consequently, it seems reasonable to guess that the rise in economic activity may slacken in the next few months, but that the final quarter of 1955 may show renewed expansion.

If all these probabilities are taken into account, a reasonable estimate for the 1955 gross national product might be around \$375 billion, which would be some 3% higher than the \$365 billion achieved in the previous peak year 1953, and about 5% above the figure for 1954. New records are to be expected in many other economic statistics, including industrial production, construction activity, retail sales, state and local expenditures, and average hourly and weekly earnings.

These prospects for economic expansion suggest continuing upward pressure on interest rates. The economy will continue to require large amounts of investment funds and bank credit, and the banking system will face the need for substantial additions to reserves in the remainder of the year.

The Federal Reserve may be expected to continue its policy of furnishing the reserves needed to support the growing needs of an expanding economy, and presumably sizable funds will be made available through open-market operations. However, the monetary authorities have demonstrated their readiness to exercise some credit restraint in the rising phase of the business cycle, and thus reserves are likely to be supplied more charily and less freely, at least as long as no turnabout in business appears in sight.

Record or near-record levels are in sight also for business profits. If we assume no substantial interruption of output as the result of strikes, corporate profits before taxes may exceed the \$40 billion mark, compared with a \$41.2 billion peak in 1951 and \$35.0 billion in 1954.

About one half of the estimated amount will, of course, be absorbed by tax liabilities, so that if these guesses are reasonable, corporate profits after taxes may be 15% or more above 1954. Dividend payments have been in a rising trend for many years, and a new peak in the neighborhood of \$11 billion appears likely.

Beyond the Year's End. There are a number of favorable aspects in the business picture, which suggest that the underlying strength of the economy may persist into 1956. Public construction is likely to continue in a rising trend for several years to come, especially as the large new school and highway programs are still to be carried out. Business spending on plant and equipment, if current surveys are meaningful, will be moving upward; consumer spending is likely to be bolstered by another income-tax reduction early in 1956.

Residential building activity next year may be somewhat below present rates; vacancies are rising in some areas, and the current tightening of credit terms will probably show some delayed effects. However, the boom in home building appears to have sufficient momentum to carry over into next year, so that 1956 is likely to be a good residential building year, although probably not so good as 1955. Automobile production also may be giving rise to some question, in view of the rapid pace of production and sales at the present time, the accompanying swift growth of in-

stallment debt, and the prospect that 1956 model changes will not be as sweeping as those for the current year have been.

These prospects suggest a slowing down in the rate of the business expansion but they do not by themselves raise the likelihood of a downturn in the visible future. It is not unreasonable to guess not only that business activity will be brisk but also that the outlook will remain bright, that business sentiment will continue strong in the months ahead, and that the economy will enter 1956 at a high level of operations.

QUESTIONS FOR THE FUTURE

Although it is certainly worth while and perhaps even profitable to venture some guesses concerning the business outlook, it is essential to keep in mind some of the very real uncertainties in the current situation. If business forecasting were simply a matter of making projections and estimates on the basis of known conditions and trends, the task of the financial analyst, as of the economist, would be less hazardous, but, of course, also much less challenging and exciting.

Our economic environment contains a host of controversial questions which are likely to become progressively more important as the advance in business continues. By remaining aware of these imponderables and prepared to meet the problems they may bring, we may hope to succeed in sidestepping at least some of the pitfalls of an expansive economic climate and improve our chances of achieving stable and solid growth over the years.

International Situation. Over the years, the business and financial forecaster has learned to accept the vagaries of international affairs as a chronic professional hazard. Predictions in this field are peculiarly unrewarding, since for most of us they cannot be based on any but the flimsiest surmises. The only feasible course, therefore, is constantly to keep in mind the possible economic consequences of sudden changes in world conditions.

Without venturing any prediction, it is of interest to note that, in some respects, the present environment bears a disturbing similarity to that which existed almost exactly five years ago. In the spring of 1950, as today, the economy was recovering from an adjustment and was operating close to capacity, and industrial prices were firming.

Should the always latent possibility of outright hostilities materialize, as it did in 1950, the impact on the economy might resemble that of the outbreak of war in Korea. It would almost certainly raise the prospect of a wave of forward buying by businessmen, and perhaps by consumers as well, of increased military procurement, and of further upward pressures on production, wages, costs, and prices.

Such a trend of events, furthermore, may be expected to release large additional demands for short-term credit, as it did in 1950. Credit policy under such conditions, however, would probably be applied in a much more restrictive fashion than in 1950, when the Federal Reserve had not yet developed a flexible policy and long-term Governments were still pegged to the 2½% level. The repercussions in bond and money markets, therefore, might be more substantial than they were five years ago.

Personal Debt. Another uncertainty in the economic outlook is posed by the large and rapidly rising levels of individual debt, especially installment and home mortgage debt. Both have increased rather steadily in the postwar years, are at record heights, and are growing very rapidly.

Installment debt, now above \$23 billion, has been rising in recent months at an annual rate of perhaps 20% or more. Residential mortgage debt, currently estimated at about \$80 billion, increased by 14% in 1954, and even greater expansion is in prospect for the current year. These increases in debt have contributed importantly to high levels of activity, especially in residential building, automobiles, and consumer durable goods.

Both classes of indebtedness have been rising at a much faster rate than personal income. A crucial question in the appraisal of the business outlook is how long this disparity in rates of growth will continue.

There is little evidence yet of any reluctance of individuals to increase their indebtedness. Also, lending terms in both fields have been liberalized during the past year.

However, the general tightening of the credit markets in recent months may exercise some restraint on the availability of funds. For the near term, therefore, credit conditions may be less favorable to the expansion of debt on progressively more liberal lending terms.

The long-range question, of course, is still with us. The ratio of personal debt to personal income will certainly rise again this year, and conceivably also next year.

Obviously, this trend cannot persist indefinitely, but, as long as business remains good, we cannot determine at what level the situation may be growing precarious or unwholesome. In any event, if the maintenance of a high level of consumer spending requires an expansion of personal indebtedness substantially more rapid than a gradual rise in personal incomes, this certainly poses some real problems for the future stability of our economy.

The Stock Market. Although the stock market for several decades has not been a major determinant of economic conditions, it may be remembered that volatile movements of stock prices have, on occasion, contributed to economic instability. It is not necessary to remind this audience that we are in an extended bull market; the prices of common stocks have risen by more than 150% from their lows in 1949 and by more than 60% in the past 20 months.

Much of this rise reflects solid investment demand, the continuing expansion of the American economy, and expanded corporate earning power. The recent rise in stock prices also reflects a more optimistic appraisal of corporate earning power and corporate dividends.

However, there is always some risk that, in a favorable economic climate, these appraisals may be carried to excess, especially if investment demand is augmented by speculative buying, financed perhaps with the help of short-term credit. In fact, sharp and sustained rises in stock prices may encourage speculation of a type that would make these prices increasingly vulnerable to changes in public sentiment.

Not every year will bring new records for gross national product and for corporate profits, and, at some future date, business prospects may be viewed more soberly and per-

haps more somberly than today. In such an event, a pronounced readjustment of stock prices in the wake of earlier unduly optimistic valuations could well contribute significantly to business uncertainty.

AVERTING BUSINESS EXTREMES

These questions and conjectures are assuredly not intended to imply that our economy is on the threshold of a perilous boom or that wide fluctuations in business activity are inevitable. The purpose is simply to emphasize that, if we are to maintain economic growth in a generally stable environment, we must be careful to avoid excessive optimism or pessimism in alternating phases of the business cycle.

Role of Business Caution. The record of business in avoiding precipitous declines since the end of World War II is admittedly reassuring. In the early postwar years, economic growth was supported by the huge deferred demands for consumer and capital goods.

Furthermore, sustained strength in investment spending enabled the economy to withstand fairly well the pressures of moderate inventory liquidation in 1948-49 and 1953-54, as well as the recent cutbacks in Treasury spending. As a result, both postwar business downturns have been relatively mild and brief.

But this does not necessarily mean that the business cycle has now been conquered. It may be pointed out in passing, and without in any way drawing broader analogies, that the business declines of 1923-24 and 1927 were likewise quite moderate.

Contributing importantly to stability in the postwar years has been the general spirit of caution that prevailed in the business and financial community. Mindful of economic developments following World War I, businessmen largely refrained from speculative inventory accumulation.

Also, the use of short-term credit for speculative purposes in general was abstemiously avoided. Even in the inflationary upsurge that followed the outbreak of the Korean War in 1950, inventory speculation was limited and short-lived.

This spirit of caution and restraint has undoubtedly helped avoid those spirals of credit liquidation which have so often compounded the problems of business adjustments. Today, one may ask whether this healthy and tenacious spirit of caution is not being replaced by widespread belief in a dynamic economy rendered depression-proof by the continuous growth of population, by rising output and incomes, and by the fruits of technology and research.

We should certainly not minimize the very real and tangible evidence of growth opportunities inherent in the many new and exciting developments around us. We should also bear in mind, however, that this is not a novel experience.

Our economy has been stimulated by dynamic forces for a century and more, but growth has not always been rapid or continuous, and business has not been immune from sizable cyclical fluctuations. Should we come to subscribe to the notion that our economy is irrevocably embarked on a one-way street, we shall be helping to stimulate the very excesses of planning, spending, and investing which would

jeopardize most seriously our hitherto successful postwar record of relatively small and innocuous business fluctuations.

Working toward Stable Growth. Although the present high degree of business and investment confidence is heartening, the inclination to assume that we have embarked on a "new era" of expansion might not only accentuate current problems in an economy approaching capacity operations, but might also hasten and magnify a business correction. At this time, our responsibility should be to guard against those unrealistic extremes of optimism which serve only to lay the ground for later sharp declines in production and employment.

An important contribution toward reducing swings in business activity can be made in the ascending phase of the cycle by wise business inventory policies. Excessive inventory building, followed by liquidation, is widely recognized as a major cause of short-run economic instability. Business today thus faces the task of following a policy of orderly accumulation, geared to current and reasonably predictable sales trends, and of refraining from speculative stockpiling in anticipation of possible price increases or shortages.

PREREQUISITE TO SOUND EXPANSION

A prerequisite to sound economic expansion is a high and rising level of business spending on plant and equipment. Here again, the problem is to avoid broad swings

which would jeopardize the stability of output and employment. The problem for business management is to shape and follow soundly conceived long-range investment programs, which can be maintained at a steady rate, thus minimizing the acceleration of investment in periods of rising activity and avoiding sharp cutbacks when business sags.

The responsibility of bankers in a business upturn is to guard against so liberal an expansion of short-term credit as to contribute to speculative and inflationary pressures. Greater caution in lending policies would not be amiss at the present time, which means that special care should be taken to avoid a downgrading of lending standards. Banking and finance today can contribute importantly to sustained economic growth by distinguishing carefully between borrowing demands, which represent the proper financing needs of expanding business and those that may be prompted largely by speculative enthusiasm.

THE COMMON OBJECTIVE

The common objective of business, labor, finance, and Government is to attain a steady growth in the American economy, with business fluctuations in both directions held to a minimum. In a decline, the task is to avoid a spiraling of contraction. Today, with most indicators pointing upward, and business confidence growing rapidly, it is no less essential to shun excesses on the side of expansion. Only if the seductive pitfalls of "boomitis" are avoided can we look forward to healthy economic growth over the years.

This announcement does not constitute an offer to sell nor a solicitation of an offer to buy any of said Debentures. The offering is made only by the Prospectus.

NEW ISSUE

\$40,950,600

(Maximum Principal Amount)

Southern California Edison Company

3¼% Convertible Debentures Due July 15, 1970

(Convertible, subject to certain conditions and limitations, into Common Stock January 15, 1957 through July 17, 1967, unless rendered convertible by earlier call for redemption)

The Company will offer to holders of its outstanding Original Preferred Stock and Common Stock of record at the close of business May 17, 1955

RIGHTS TO SUBSCRIBE FOR CONVERTIBLE DEBENTURES

Twenty Rights and the subscription price of \$100 will be required to subscribe for each \$100 principal amount of Debentures. Warrants representing rights will be mailed May 23, 1955 and will expire June 14, 1955.

Copies of the Prospectus may be obtained by writing to

SOUTHERN CALIFORNIA EDISON COMPANY

P. O. BOX 351 • LOS ANGELES 53, CALIFORNIA



SAFeway Stores INCORPORATED

Common and Preferred Stock Dividends

The Board of Directors of Safeway Stores, Incorporated, on May 10, 1955, declared the following quarterly dividends:

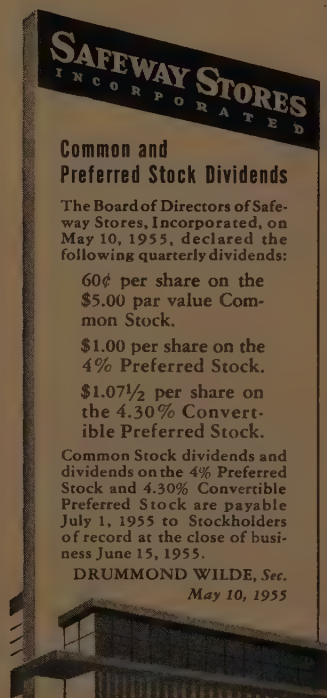
60¢ per share on the \$5.00 par value Common Stock.

\$1.00 per share on the 4% Preferred Stock.

\$1.07½ per share on the 4.30% Convertible Preferred Stock.

Common Stock dividends and dividends on the 4% Preferred Stock and 4.30% Convertible Preferred Stock are payable July 1, 1955 to Stockholders of record at the close of business June 15, 1955.

DRUMMOND WILDE, Sec.
May 10, 1955



This Market Basket Feeds Millions

In 1954, National Distillers bought enough natural gas to fuel the gas furnaces of New York City for over a year . . . glass enough to glaze the windows in the United Nations building approximately 200 times, with some left over . . . and steel enough to fence in the whole continent of North America.

These are just a few of the 25,000 items we purchase, costing over \$100 million every year. To move them and the products they make requires every facility of America's vast transportation system. In fact, our tank cars alone, in just one month, cover enough miles to encircle the globe 23 times!

Every dollar National Distillers spends means income for someone—for the companies we buy from, for their employees, for the places where they spend their money. In this way, our "grocery bill" contributes substantially to the exchange of goods and services—an essential part of the life blood of America's economy.

Yes, our super-market is the whole U.S.A. And every item in our giant market-basket is needed in the manufacture or shipping of National Distillers' wide variety of products, which includes petrochemicals, solvents, intermediate and finished chemicals, as well as our famous distilled beverages, some of which are listed below—all serving the nation's growing consumer and industrial needs.



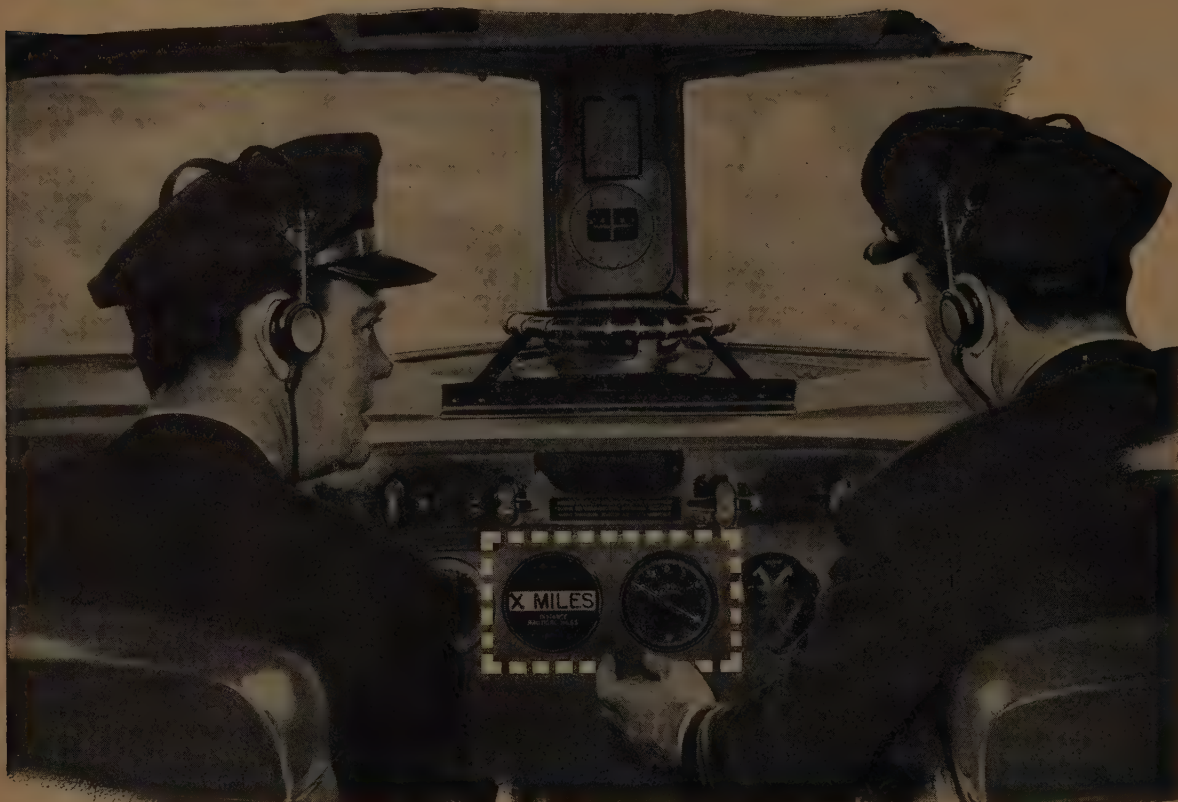
National Distillers Products Corporation

NEW YORK 16, N.Y.

**OLD GRAND - DAD · OLD TAYLOR · OLD CROW · PM · OLD SUNNY BROOK (BRAND) · GILBEY'S GIN · HILL and HILL
BELLOWS PARTNERS CHOICE · BOURBON DE LUXE · BOND & LILLARD · OLD HERMITAGE · DeKUYPER CORDIALS**

OLD GRAND-DAD, OLD TAYLOR, OLD CROW, KENTUCKY STRAIGHT BOURBON WHISKIES, BOTTLED IN BOND, 100 PROOF. • PM BLENDED WHISKEY, 65% GRAIN NEUTRAL SPIRITS, 86 PROOF. • OLD SUNNY BROOK KENTUCKY WHISKEY—A BLEND, 65% GRAIN NEUTRAL SPIRITS, 86 PROOF. GILBEY'S DISTILLED LONDON DRY GIN, 100% GRAIN NEUTRAL SPIRITS, 90 PROOF. • BELLOWS PARTNERS CHOICE WHISKEY—A BLEND, 60% GRAIN NEUTRAL SPIRITS, 86.8 PROOF. • HILL AND HILL, BOURBON DE LUXE, BOND & LILLARD, OLD HERMITAGE, KENTUCKY WHISKIES.

TACAN-



Amazing New **IT&T** development *will revolutionize aircraft navigation*

Gives position of aircraft instantly, automatically,
and with accuracy never before attained.

TACAN (tactical air navigation) provides both distance and bearing information in a single "package" about the size of an ordinary shoe kit. This has never been done before!

By integration of functions, and miniaturization into one small unit, TACAN represents a giant stride in aircraft navigation equipment. Add extreme accuracy, and adaptability to varying installation conditions such as on shipboard or for mobile land equipment, and you know why TACAN is described by military and civil aviation officials as one of the most significant advances in many years.

TACAN is the result of a series of development programs sponsored by the U.S. Navy and the U.S. Air Force at Federal Telecommunication Laboratories, a division of IT&T. It is another of the outstanding IT&T research and engineering "firsts," and major contributions to safer, more dependable flying.

*A light, simple, comprehensive TACAN airborne unit
can be made available for private flying.*



INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION
67 Broad Street, New York 4, N. Y.

General

Luncheon

CHAIRMAN
NATHAN BOWEN
Goldman, Sachs & Company

Annual Message of the President

M. DUTTON MOREHOUSE *

THE PAST YEAR has been an exciting and interesting one for me. During the year I have visited with the officers and directors of all but three of our Societies and with analyst groups in two other cities to discuss with them the current activities of the National Federation.

I deliberately tried to avoid injecting myself into the regular meetings of the individual Societies, as the free discussion possible in a small group seemed by far the best way to foster a free exchange of ideas and to apprise our members of what we were trying to do in the Federation. During the year, however, I did speak at two such meetings. In both instances I also met with the directors separately. These visits were well received, and from the Federation point of view were most productive.

Much to my surprise, during the fall and winter before the Annual Report season, I was called upon to present the analyst's point of view to various corporate management groups—a very real tribute to the work of the Corporate Information Committee. Needless to say, I drew heavily on the various subcommittee reports of this group for my material.

At this time it is appropriate to tell you something of what has been accomplished this year at the Federation level. Of prime importance has been the acquisition of **THE ANALYSTS JOURNAL**. We owe a real debt of gratitude to the New York Society for their co-operation in making this step possible.

There was unanimous agreement that the transfer of ownership from the New York Society to the National Federation was in the best interests of the **JOURNAL** as well as analysts in general. Now that we all have a share in and responsibility for its success, I hope that you individually will co-operate in securing articles—good ones.

Obviously, adequate information is the very lifeblood of the financial analyst. It was, therefore, particularly appropriate that we took an active part in the movement to

reinstate rule 9-K of the Securities and Exchange Commission, requiring the filing of quarterly reports of sales.

Last fall Lin Savage, George Nelson, and I met informally with the SEC staff to discuss this matter. When hearings were later announced on a definite proposal made by the SEC for a new type of 9-K report requiring more complete information on a semiannual basis, the Federation registered its official approval.

Furthermore, in his capacity as chairman of the Corporate Information Committee, Lin Savage appeared at the hearings in Washington on the behalf of the Federation. We likewise played an active part in encouraging individual Societies and analysts as well as others to support the proposal. One of our members, Robert Colman of Philadelphia, chairman of the trust investment committee of the ABA, was instrumental in getting this important group to register their support.

In part, the rescinding of the original rule requiring the reporting of interim information was due to the lack of liaison between the SEC and ourselves. In order to rectify this, a permanent Government Committee has been appointed by the National Federation, which will meet in-



M. Dutton Morehouse
Retiring President
National Federation

Photo by Moffett Studio

*Brown Brothers, Harriman & Company.

formally from time to time with the staff of the SEC and other governmental agencies with whom we might have questions of mutual interest.

The Federation continues to grow. The Denver and Omaha-Lincoln Societies have been approved for membership, and others have applied or are considering doing so. The spread of the analysts Societies to the smaller financial centers poses a very real problem concerning the feasibility of a Society in those cities where the financial community is such that there is no clear division of responsibility at the research level.

It is obvious and essential that the high standards which the Federation has established must be maintained if the analyst movement is to progress. In the smaller centers, the position of the security analyst is seldom clearly defined as it is in the larger cities and with the larger organizations.

I should like to call your attention, however, to the fact that the name of our group is the National Federation of Financial Analysts, *not* security analysts. As long as the membership of the individual Societies clearly excludes security salesmen and is limited to those seriously engaged in some form of financial analysis, including treasurers, comptrollers, or senior financial officers of the smaller companies, many of whom have investment responsibility for pension funds, I see no reason why the standards of the Federation would be violated. Such men can certainly be expected to contribute to maintaining the highest possible ethical and professional standards.

The Denver Society has solved this question in a different, but, in my opinion, a most realistic and worth-while manner. This group has been organized with the strictest interpretation of what constitutes a security analyst.

The potential membership is necessarily small. Their meetings are used largely as seminars. Their own members read assigned papers, and these are followed by general discussion on subjects of predetermined interest. As a result, through creating additional educational opportunities, the group is definitely fostering the analyst movement in Denver.

As most of you undoubtedly know, the 1956 Convention is to be held in Boston, and yesterday your directors approved Cleveland as the site of the Convention in 1957.

The adoption of some form of charter or certificate for security analysts has continued to be a live issue. I have discussed this question at length throughout the country and, in general, have found a basic agreement in principle favoring this method of promoting the ethical and profes-

sional standards of the analyst. As discussions have progressed, however, I have become more and more aware of the very complicated nature of the problem, and the need for caution and extreme care in developing such a program.

I personally have been most interested in developing a summer seminar for analysts. During the year I appointed a special committee with Russell Eddy and William Norby as chairmen to work with Marshall Ketchum, professor of finance at the University of Chicago, to develop a concrete program which could be presented to your directors. Mr. Ketchum, a member of the Chicago Society, is eminently qualified to advise with this committee, as he has directed the life officers seminar at Beloit for the past thirteen years.

Many of you no doubt are familiar with this group. I am happy to be able to report to you that yesterday the directors approved the proposal for a one-week seminar to be held at Beloit College at Beloit, Wisconsin, beginning in the summer of 1956.

In the words of the committee report: "The seminar will afford an opportunity to senior investment analysts and managers for one week of concentrated study of basic economic, social, and investment trends of importance. In his daily activities and in the meetings and conventions of the Societies, the investment analyst finds himself concerned with the specifics of particular companies and industries and the details of market patterns.

"In many respects these are essentially short-run problems, and they completely fill his time. The seminar will give him a chance to get away from his daily routine and the specific and short-run problems and to review developments of importance from the standpoint of their long-run impact on investment policy.

"This broader horizon of more fundamental problems is the context out of which sound investment policy must be formulated. It is hoped that the seminar will also aid in fostering a common body of knowledge and procedure—in other words, a mental discipline."

Ultimately the seminar will be of benefit to the movement toward a chartered analyst. The seminar, of which you will hear more later, will be limited to 100 in any one year.

As the Federation has grown, the need for an Executive Secretary has become more and more apparent. We are all mindful of the splendid job which George Hansen has done for the past two years, and no one appreciates the tower of strength that he has been more than I.

LION OIL COMPANY



A regular quarterly dividend of 50¢ per share has been declared on the Capital Stock of this Company, payable June 15, 1955, to stockholders of record May 31, 1955. The stock transfer books will remain open.
E. W. ATKINSON, Treasurer
May 10, 1955.

WHEN YOU CHANGE YOUR ADDRESS

Please notify us promptly of your old as well as your new location. Otherwise an issue may miss you.

If your copy is addressed BEFORE your notice reaches us, it will be necessary for you to send us forwarding postage.

THE ANALYSTS JOURNAL
Room C-903

270 Park Avenue

New York 17, N. Y.

Nonetheless, I am happy to be able to tell you that the directors have authorized the Executive Committee to hire a permanent Secretary as soon as the appropriate man can be found. In the meantime, George Hansen has consented to carry on in his dual office of Secretary-Treasurer.

So much for the year just past. Looking further back to the formation of the National Federation in a room over Schwartz's Restaurant eight years ago, I am continually amazed at the growth which we have seen.

The increase in numbers to 18 Societies and 4,500 members is remarkable enough, but even more worth while is the increased acceptance of the analyst by corporate management as a person of standing and intellectual integrity. Admittedly, the times have helped in this growth of the Federation and the acceptance of security analysis as a profession.

The typical conservative investment account no longer is composed solely of bonds and mortgages as it was in the days when common stocks were regarded as not quite nice. The inflation of two World Wars and the economic growth of the country has forced the prudent investor into common stocks.

The necessity for closer supervision for successful common-stock investment has stimulated the demand for professional investment management. The trend toward institutionalized investment and the growth of the trust business has provided an increasingly large class of investors who are primarily interested in long-term value rather than speculation.

As a result, the fields open to the security analyst have broadened. The search for value as a primary measure of investment has required more tools, in the way of more complete disclosure of corporate information.

It is perhaps somewhat difficult to tell which is the cart and which is the horse—whether it has been the change in investment styles, the increased number of analysts seeking more complete information for the proper evaluation of securities, or the availability of more information which has fostered institutional investment requiring the services

of the trained analyst. Nevertheless, whatever the cause, we have certainly come a long way from the England of the Eighteenth Century, when the prospectus of a company being floated at the time of the South Sea Bubble inflation merely stated that the purpose for which the company was being organized would be announced later. In the development of additional and more adequate information, the National Federation of Financial Analysts through its Corporate Information Committee has played a major role.

The security analyst has come to occupy a very real place in the economic community. Today he represents a man of considerable training and has acquired a truly professional status.

When one realizes that, outside of a small circle, few analysts have public recognition, it is rather astonishing to speculate on the enormous power wielded by the professional analyst, who today is responsible for the investment of billions of dollars. It is true that the analyst may not make the actual decision, but the work which he presents guides the thinking of the investment officer on the front line.

For good or for evil, he has the power to channel investment. His thinking is important to those seeking new funds, and frequently determines whether funds will be forthcoming for business expansion.

The analyst's opinion is sought by management as a means of maintaining the good will of their stockholders, even though they may not be seeking additional capital. Our responsibilities to the economy have become tremendous as we have acquired this position of trust.

Having attained recognition over the years, it is essential that we be ever mindful of the need for increased emphasis on the ethics of our business. Since we are in a professional position, it is embarrassing, if not impossible, for the individual analyst to blow his own horn, but we can do this as a group.

The desirability of a strong national Federation which will continue the development of a common body of knowledge as well as high ethical standards for the financial analyst is clear. This we shall achieve!

DIVIDEND NOTICE

The Board of Directors of the Fairchild Engine and Airplane Corporation declared a dividend of 25 cents (\$.25) per common share, payable June 1, 1955, to stockholders of record, May 16, 1955.

Richard S. Boutelle
President



ENGINE AND AIRPLANE CORPORATION
FAIRCHILD
HAGERSTOWN, MARYLAND

STANDARD BRANDS

Incorporated

COMMON STOCK DIVIDEND

The Board of Directors declared a quarterly dividend of 50c per share payable on June 15th to stockholders of record on May 16, 1955.

PREFERRED STOCK DIVIDEND

The Board also declared a dividend of 87½c per share payable June 15th to stockholders of record on June 1, 1955.

JOHN B. NOONE
Secretary & Treasurer

April 28, 1955.

HAZEL-ATLAS GLASS COMPANY

WHEELING, W. VA.



DIVIDEND NOTICE



A quarterly cash dividend of 30 cents per share on the Capital Stock of the Company, will be paid July 1, 1955 to stockholders of record at the close of business June 10, 1955.

H. G. LEWIS
Vice President
and Secretary

"COLOR TV: WELL UNDER WAY BEFORE CHRISTMAS"

GENERAL SARNOFF POINTS TO INCREASE OF COLOR TV SHOWS AND HOME RECEIVERS



ANNUAL MEETING OF RCA STOCKHOLDERS, May 3, 1955. Approximately 1,100 attended.

POLIO RESEARCH AIDED BY RCA ELECTRON MICROSCOPE

An RCA electron microscope, capable of magnifying up to 300,000 times, played an important role in the research that produced the new polio vaccine. It was this same electron microscope that enabled man to see and to photograph the polio virus for the first time.

Today, more than 500 RCA electron microscopes are in use throughout the world—in industry, science and medicine.

NEW RCA AIRBORNE RADAR "SEES" WEATHER MILES AWAY

Aircraft pilots can now keep informed of weather conditions as far ahead as 150 miles. This is accomplished while in flight by means of new RCA airborne radar, which enables commercial airlines to plan flights with greater precision and passenger comfort. The equipment also reveals surface features such as lakes and mountains... even when visibility is limited. Airborne radar is another RCA contribution to safer, dependable commercial aviation.

NEW YORK, N.Y.—In a statement at RCA's 36th annual meeting of stockholders, Brig. General David Sarnoff, chairman of the board, emphasized the approaching maturity of color television. He said he firmly believed "Color Television will break through and be well under way before Christmas of the present year." He stated that NBC—a service of RCA—is at the forefront of color TV programming. NBC plans for autumn 1955 include colorcasts of a new dramatic series featuring the greatest classics of all time. Color "Spectaculars" will be continued, and other major color shows are planned, including several football games.

RCA color receivers equipped with the 21-inch color tube were placed on the market in December, 1954. Results have been highly successful. Facilities have been set up for large-scale production, and the RCA television tube manufacturing plant at Lancaster, Pa., is being expanded to produce more than 30,000 tubes a month.

How many parts in an RCA color TV set?



More than 2,070 parts are used in the 21-inch RCA Victor Color TV set, and 600 suppliers provide these components.



RADIO CORPORATION OF AMERICA
ELECTRONICS FOR LIVING

Accounting Conventions Past, Present and Future

GEORGE OLIVER MAY*

What follows is what I would like to have said when I had the pleasure of addressing the Convention of Financial Analysts on May 9th, had time permitted. It is presented in fulfillment of an offer which I then made to develop my thesis more completely for your JOURNAL.

I WELCOME THIS OPPORTUNITY to talk to financial analysts about financial accounting; it is the introduction of analysis that converts bookkeeping into accounting. Financial Accounting is the one of four branches of accounting in which you and I are the most interested, and the one that receives the least consideration. I sometimes speak of it as the "Cinderella" of the accounting family; it suffers from the attention that is lavished on the other three members of the family: Recording, Administrative and Tax Accounting, because they hold out prospects of a cash return which Financial Accounting cannot offer. I look on your profession as the natural ally of those whose interest is in this branch of accounting, the end product of which is found in reports to stockholders.

The subject is one on which I have written and spoken frequently. I discussed some phases of it in an article which appeared in your JOURNAL about two and one-half years ago. It was considered by a Study Group on Concepts of Income, in which I took an active part and whose report was published under the title, "Changing Concepts of Business Income," by Macmillan in 1952. I can deal with the question today only very broadly, but I propose to go back to the beginnings of financial accounting and to consider the effects of four influences: form of organization, changing price levels, regulation and other external influences, and taxation.

The most important object of Financial Accounting today is the measurement of business income. Income is a term that is vague in concept and powerful in its influence. The contexts in which it has been used have changed greatly during the last hundred years and especially during the last half of that period. Financial Accounting has, in general, responded only very slowly to those changes.

As my opening date I must go back to the end of the fifteenth century when double entry accounting was rediscovered through the work of Pacioli and others. I need not dally here for, as Professor Hatfield has said, accounting made little progress during the succeeding four hundred years. I will go on, therefore, to a date just one hundred years ago, pausing for a moment to comment that the wave of speculation in 1720, to which your President referred in his report, and the ensuing Bubble Act, contributed greatly

to the postponement of limited liability incorporation in England until as late as 1855.

One hundred years ago private business in England, which was then the leading industrial nation in the world, was conducted by partnerships or associations, with the liability of their members unlimited or limited only by specific contracts. Houldsworth, in his *History of English Law*, says that it was the extension of the practice of contracting out from liability that virtually compelled the government to enact the Companies Act of 1855. That Act was repealed and amended and the Act of 1862 is now commonly regarded as the Magna Carta of limited-liability incorporation. Some such step was as essential an element in the great growth of industry as the discovery of new sources of power or the Industrial Revolution.

NET WORTH

In 1855, and indeed until the inventory crisis of 1920, the external influence that most affected accounting was that of the credit grantor. Accounting was mainly concerned with net worth; income was the increase in net worth during a period with allowance made, of course, for introductions and withdrawals of capital.

The terms *net worth* and *book value*, which had significance in those earlier days, are still often employed, but they are quite inapplicable to the accounting statements of today.

The growth in the scale and complexity of business enterprises long since made annual valuations impossible, and in the last half of the 19th century the concept of income was definitely changed from an increase in net worth to an excess of revenues over related costs; the balance sheet became a statement of investment—not a statement of values.

I should like to see fuller recognition of these facts in the practice of your profession as well as in that of the accountants. I will go further and say that it would be helpful if the term *net earnings per share* were given less prominence. The practical importance of this statistic to any individual derives mainly from the fact that so many other people attach to it an importance that is unwarranted.

1855—DOUBLE ENTRY

In 1855 the accounts of the overwhelming proportion (in number) of business enterprises in England were kept by single entry. One reason for this was that double entry,

*Price, Waterhouse & Co.

as then conceived, was inadequate to the new needs. It had been conceived and discussed for centuries as a method to be used by merchants and bankers. Even today it is not uncommon to find reference to its function as being limited to the recording and analyzing of *transactions at a bargain price*. It was not until 1884 that depreciation accounting was first adequately presented and advocated in England, and not until 1887 that a volume appeared in which the embodiment of the manufacturing accounts in the general accounting system of enterprises was proposed.

The use of the term *double entry* has undoubtedly also had the effect of creating the belief that only one form of analysis could be undertaken. Obviously, it may be useful to analyze transactions and events in terms of more than one significant classification.

Thus, while double entry is a powerful technique of combining recording and analysis, a narrow view of the use and possibilities of the technique has impeded, and still impedes its greatest utilization.

In my brief experience in London in 1897, I encountered a fairly large manufacturing company about to issue its securities on the London market, whose books were kept by single entry. I audited an even larger company whose general books included only a single operating account "Merchandise". This was fully analyzed by the chief accountant himself into a set of departmental profit and loss accounts. Out of the two, a conventional profit and loss account had to be prepared—a task which, I might add, I left uncompleted when I sailed for America.

MODERN ACCOUNTING

By 1897 the English practice was fairly well defined. It was also spreading to the United States where the first CPA law had been passed in 1896.

Between that year and 1903, various causes contributed to a rapid development of financial accounting here. Among these were the wave of consolidations which increased the number of important combines from 82 to 318 and their recorded capital from 1.2 to 7.2 billion dollars (John Moody, "The Truth about Trusts 1904," pp. 455-467); the spread of independent auditing and the presentation by auditors of reports which indicated generally (though not always adequately) the basis on which the accounts were stated; and the notably high standard of the report of the United States Steel Corporation in 1903.

When the first Congress of Accountants met in St. Louis in 1904, the papers presented set a standard that even when regarded from the standpoint of today commands respect.

The grantor of credit was still the principal external influence on accounting, and the emphasis was still on the balance sheet. This influence was not weakened until the inventory depression of 1920 brought about a great reduction in the extent of financing through commercial paper and a corresponding increase in financing through capital stock.

TWO BASIC POSTULATES

The first and most important convention of business accounting was and still is that the medium of exchange is

acceptable as the accounting unit of measurement; and that changes in the purchasing power of that unit may be ignored. Acceptance of the first part of this convention is almost inevitable. The second part, I suggest, is today questionable.

With the coming of the perpetual corporation, a second convention had begun to develop, not very rapidly because the theoretically perpetual corporation often proved in practice to be transitory. The new convention was known as the "going concern" basis of valuation, but is better described as the postulate of indefinite life of the enterprise. Acceptance of this postulate, it may be noted, was implicit in depreciation accounting, for that system implicitly assumes that the enterprise will last as long as the assumed life of any asset that is being depreciated. Another implication is that assets necessary to the conduct of the enterprise will be replaced as they become worn out or obsolete. And a very important third implication is that the value in exchange of those assets is immaterial because they are not for sale.

What constitutes adequate implementation of this postulate in a time of rising prices is the most crucial problem of accounting for corporations which have large investment in wasting physical assets or large inventories.

CHANGES IN PRICE LEVEL

The years 1896 and 1897 were turning points in history. 1897 was the year of Queen Victoria's Jubilee, which may be regarded as the high point of the British Empire. Immediately ahead lay the Boer War, which began the undermining of the British position, and the Spanish-American War which brought the United States into a new world prominence.

The quarter century which ended in 1896, during which new accounting principles were being developed, was one of falling prices. In 1897 the price level began to rise. By 1913, the year before the First World War, it had risen 50 per cent above 1896; in the 1920's it rose to 50 per cent above the 1913 level or to 225 per cent of the 1896 level. In the 1930's there was a sharp fall, but today the level stands at about 3.65 times that of 1896. That is about equivalent to 2.25 per cent per annum cumulative.

The social attitude towards saving has changed. Thrift is not the virtue that it was in an era which Keynes described as one of production, abstinence and want. And provision for the future is now made more largely through pension plans (which have the advantage that taxes are deferred until the pension is received) than through personal savings. This shift seems to increase the importance of the problem of inflation to the business enterprise. What, it may be asked, will be the effect on pension plans if in the course of the next 50 years we have a rise in the price level comparable to that which has taken place in the last 50 years?

Alfred Marshall in 1887, bemoaning the fact that there was no "safe" investment, proposed the creation of a "unit of value" as well as a medium of exchange and outlined a method of doing this. H. W. Sweeney in 1926 outlined in

considerable detail a *System of Stabilized Accounting*. Such proposals seem to me to lack a sense of political reality.

The E bond holder who, at the end of ten years receives \$1,000, which will not buy what the \$750 he invested would have bought, will continue to be regarded as having received income of \$250.

It may be questioned whether the adjective *safe* (in either the positive or superlative form) can wisely be applied to even a United States government obligation. It may well be that many holders of E bonds have been led by their experience to think that prime American equities may be a more *advantageous* investment than any monetary claim.

THE ACCOUNTANT'S RESPONSIBILITY

The history I have sketched raises a major question. Is the accounting profession fulfilling its obligation when it refuses to use its analytical powers to distinguish between (a) that part of what is now called income (expressed in terms of the medium of exchange) which represents gain derived from transactions measured in units of substantially the same purchasing power, and (b) that part which is the effect of changes in the purchasing power of the unit that is employed?

The Study Group on Concepts of Income recommended that financial reports should reveal the results of such an analysis in information supplementary to the standard financial accounts, and that the accountant should assume a responsibility for this supplementary information similar to that which he assumes in respect to the formal accounts.

Of twenty accounting members of the group (practicing or academic) twelve concurred in this recommendation, but seven or eight declined to do so. Neither of the leading accounting organizations of the country has yet endorsed the group's recommendation. I feel strongly that they should do so.

REGULATION

Of the seven or eight accountants who dissented from the Study Group's recommendation, five held or had held important positions in governmental, regulatory bodies.

This brings me to the question of the effect on the accounting "framework of assumptions" of governmental regulation.

In 1904 there was virtually no regulation, either state or federal, of either corporate accounting or charges for services made by companies.

Regulation usually has been the result of past abuses and its first effects, therefore, salutary. But after the first wave of reform has passed, regulation seldom displays the objectivity which teachers of accounting are always seeking. It is more likely to substitute the subjective views of the regulators for those of the regulated.

In public utility accounting, which is now regulated, the crucial problem is that of providing for exhaustion and obsolescence of capital assets. Upon this point the influence of the period of falling prices that ended in 1896 has been a potent factor.

In 1898 shippers secured a decision in *Smythe v. Ames* which was favorable to them under a condition of falling

prices, but which in the present century plagued commissions for many years until it was virtually superseded, if not reversed, by the decision in the *Hope Natural Gas Case* in 1944.

To the extent that investment on which the allowable return is now based is computed on the dollar expenditures (as it is also in effect in England), the law leaves the investor to suffer the same loss from inflation as the investor in E bonds or any other monetary claim.

To the extent that the law now sanctions and regulation prescribes, a limitation of provision for property exhaustion (depreciation) to charges based on past monetary costs, the result today is, I suggest, a serious understatement of the costs of maintaining the permanence of the investment which is postulated in accounting.

The answer of supporters of the existing practice is that the investor is compensated for any inadequacy of exhaustion charges by corresponding additions to the capital sum upon which he will be deemed entitled to earn a return in the future. But, especially with atomic energy looming up, it may be said that "a bird in hand is worth two in the bush."

On the treatment of capital assets, official accounting opinion is at present on the side of the commissions.

TAXATION

Industries which have not been subjected to regulation have been differently affected by developments in the field of taxation.

The late Thomas S. Adams, unquestionably our greatest tax economist of recent times, frequently pointed out that an increase in the rate of tax might be so great as to change its essential character.

The American Institute of Accountants has recognized that corporate income taxes are today a cost that should be allocated as other costs are allocated, just as if the tax were called a corporate excise tax. That being so, it seems to me to be almost as inappropriate to speak of *income before income taxes* as to speak about *income before property taxes* (which are based on the capital value of property, which in turn is based on its capacity to produce income). There is no income to the corporation until the tax has been provided for.

We have been faced by the problem of harmonizing two national domestic policies, each calling for growth at a relatively high rate of progression—the first, a policy of maintaining virtually full employment through increase of capital investment; the second, a policy of constantly reducing the disparity in the distribution of "income." We have relied on heavy taxes on "income" which, in the case of business income, are, as I have said, now recognized as "costs." The significance of reports of what has been accomplished are vitiated by our inconsistent uses of the word "income." Those reports neither reveal the effects of inflation nor provide the means for others to measure those effects.

EXPEDIENTS

The problem of making adequate provision in tax accounting for exhaustion of property has, in the case of in-

dustrial companies, been met to some extent by temporary expedients such as accelerated amortization or liberal allowances for research and experimentation which may have created important new values. These expedients are discussed in the last report of the United States Steel Corporation. The adoption of them has had a detrimental effect on corporation accounts. In this context I would draw your attention to the action of the Chancellor of the British Exchequer who last year substituted a frank subsidy to capital investment for the provisions for anticipation of tax deductions which had previously been in existence.

On the corresponding problem in relation to inventories (which are unimportant in the case of the utilities, but of great importance to manufacturing and merchandising enterprises) official accounting opinion is unsettled. That of the American Accounting Association is under reconsideration and that of the American Institute of Accountants is, I feel, ambivalent.

The Institute accepts LIFO (last in-first out) accounting, which results in the charge against sales of the cost of the latest goods received, or in the case of department stores—costs adjusted on the basis of price indexes. It supports its position on the ground that LIFO reflects a "flow of costs," a term that to me, at least, is unclear and not relevant. Certainly the consideration advanced is not that which determines whether LIFO or FIFO (first in-last out) shall be employed. The governing consideration is usually tax advantage; the Congress having approved LIFO initially on the condition that the same method be used for general accounting purposes as for tax purposes.

I do not think it is practicable to levy over any considerable peace time period a tax at the rate of 52 per cent on what would be deemed income if the tax were not levied, and to leave a residue which would be adequate to implement the two policies to which I have referred.

I believe that if these objectives are to be achieved, taxable income will have to continue to be reduced by relief provisions and expedients below a normal concept of income. This will tend to maintain diversity between income, as the term is employed in general business and taxable income; a result that is contrary to the principle laid down in the Revenue Act of 1918 and preserved in the language of the statute today.

CONCLUSION

We are living in a world of accelerating change; financial accounting is slow to adapt itself to change. Consequently, the significance of annual financial reports is becoming more difficult to appraise. The situation cannot be ameliorated by an enforced uniformity, but only by fuller disclosure such as was recommended in the correspondence between the American Institute of Accountants and the New York Stock Exchange in 1932-34.

Your profession has, I suggest, an important part to play in the development of financial reporting to stockholders. Your work is largely based on accounting reports, but you have no direct responsibility for the form in which they are made. Accountants have no autonomous power, but they have a great responsibility. That responsibility ex-

tends to a wide range of enterprises, large and small, complex and simple. The great body of accounting thought is unwieldy and moves slowly (except under the stimulus of obvious and immediate monetary advantage when it is likely to move towards greater diversity). Your profession might act as a reconnaissance force to explore desirable lines of advance. Upon this point I would quote from the Institute's Report to the New York Stock Exchange of September 22, 1932:

"Accounts are essentially continuous historical records; and, as is true of history in general, correct interpretations and sound forecasts for the future cannot be reached upon a hurried survey of temporary conditions, but only by longer retrospect and a careful distinction between permanent tendencies and transitory influences. If the investor is unable or unwilling to make or secure an adequate survey, it will be best for him not to rely on the results of a superficial one." (Audits of Corporate Accounts—American Institute of Accountants 1932-34.)

THE FUTURE

I said earlier that I intended to take a bold look into the future. An ultimate objective which I have long had in mind is that financial accounting would someday take on another dimension and recognize that business moves from one plane of values to another as it is carried on. That would mean that the effects of price changes would be reflected within the limits of the formal accounts. Such a development would be an even more notable advance than that which brought manufacturing accounts into the general books in the last quarter of the 19th century. This, I recognize is not an objective that is likely to be achieved in my lifetime or perhaps even in yours.

In the meantime, I would be content if we could make it a requirement of good corporate practice (at least in the case of the larger corporations whose securities are widely distributed) to deal with these effects in supplementary information passed upon by the accountants. There is no reason why this should not be done with as close an approach to exactitude as is attained in important parts of present-day accounting.

The common answer to proposals of this kind is that the average stockholder does not understand even what he now gets. Your profession provides the rejoinder to this argument. For it seems clear that the average investor in the future will have to rely more and more on the service of members of your profession. And if so, the crucial question will come to be not whether the stockholder will understand the information that is made available, but whether members of your profession will understand it and make good use of it. And certainly, no one incapable of doing so would have any proper place in your ranks. Therefore, I look to the development of your profession as hastening the day when financial accounting, which has been my lifetime's work, will enter a new era and attain a new scientific level.

The English Institute of Accountants has recently devoted a large legacy bequeathed to it for educational pur-

poses to the creation of a professorship of Finance and Accounting at Cambridge and J. R. N. Stone, a leading authority in the field of National Income Accounting, has been appointed to the post.

A long term project for an extended and scientific study of the accounting that produces reports on which our investment and national policies are largely based would be

worthy of a major grant from one or more of our great Foundations, either for endowment or for maintenance over a period of years. It should be able to attract an adequate personnel, which did not exist even twenty-five years ago, but could, I think, we found today. An effort to bring about the creation of a school of this type should enlist the warm support of every member of your associations.

SOCONY MOBIL OIL COMPANY, INC.

Dividend No. 177



The corporate name of Socony-Vacuum Oil Company, Incorporated, has been changed to SOCONY MOBIL OIL COMPANY, INC.

The Board of Directors on April 26, 1955, declared a quarterly dividend of 50¢ per share on the outstanding capital stock of this Company, payable June 10, 1955, to stockholders of record at the close of business May 6, 1955.

W. D. BICKHAM, Secretary

Public Service Electric and Gas Company

NEWARK, N. J.



QUARTERLY DIVIDENDS

Dividends of \$1.02 a share on the 4.08% Cumulative Preferred Stock, \$1.04½ a share on the 4.18% Cumulative Preferred Stock, 35 cents a share on the \$1.40 Dividend Preference Common Stock, and 40 cents a share on the Common Stock, have been declared for the quarter ending June 30, 1955, all payable on or before June 30, 1955 to holders of record at the close of business on May 31, 1955.

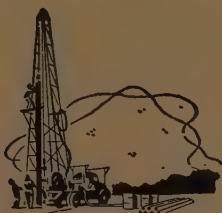
F. MILTON LUDLOW
Secretary



HOW WESTINGHOUSE AIR BRAKE serves you—and industry, too!

Every day some product made by Westinghouse Air Brake Company serves you—but you may not be aware of it. The things we make are sold only to industry but they contribute to your safety, convenience and better living.

Westinghouse Air Brake was incorporated just 86 years ago. Since then, Westinghouse Air Brake products have become famous in just about every country on earth.



DRILL A WELL. If you're drilling for water, exploring for oil or minerals, or blasting, the job can be done more efficiently with a rig built by George E. Failing Company*.



TAKE A RAILROAD TRIP. Products of Air Brake Division*, the world's leading manufacturer of air brake systems, assure quick, smooth stops. Train movements are controlled by reliable signaling systems produced by Union Switch & Signal Division*.



MOVE A HILL. If it's a big hill, you'll want to move the earth fast with heavy-duty scrapers and bulldozers made by Le Tourneau-Westinghouse Company*.



CONTROL A BOAT. Hundreds of boats, military craft and machines are controlled by pneumatic systems engineered and built by the Industrial Products Division*.



ERECT A BUILDING. You will need rock drills, paving breakers and air compressors to power them. These are all products of Le Roi Division* and the Cleveland Rock Drill Division*.



DEFEND AMERICA. Communications is the heart of strong defense. Melpar, Inc.* is a leading designer of rugged, compact microwave communications equipment, flight simulators and electronic devices for the armed forces.

* Division or subsidiary of Westinghouse Air Brake Company

Westinghouse Air Brake

EXECUTIVE OFFICES: COMPANY THREE GATEWAY CENTER, PITTSBURGH 22, PA.

AIR BRAKE DIVISION . . . air brake equipment, brake slack adjusters, anti-wheel-slide devices, compressors and accessories for all rail vehicles and trolley buses.

UNION SWITCH & SIGNAL DIVISION . . . centralized traffic control, car retarders, automatic train control, train communication and interlocking systems and industrial electronic equipment.

INDUSTRIAL PRODUCTS DIVISION . . . pneumatic cylinders, actuators, air control devices of all kinds and engineered pneumatic control systems.

LE ROI DIVISION . . . internal combustion engines, portable, stationary and self propelled air compressors, and mixers.

CLEVELAND ROCK DRILL DIVISION . . . rock drills and air tools for mining, construction and quarry work.

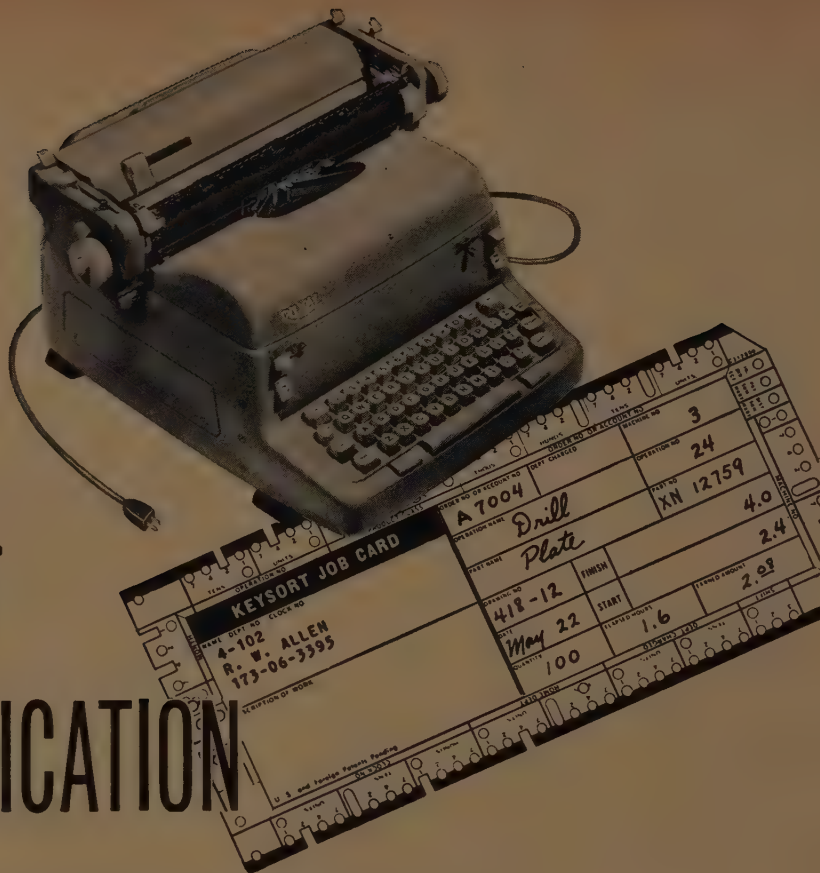
LE TOURNEAU-WESTINGHOUSE CO . . . earth moving equipment, including tractors, scrapers, haulers, graders and other construction tools.

GEORGE E. FAILING COMPANY . . . portable drilling rigs for oil, water and mineral exploration and a variety of attachments and supplies.

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management
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TOOLS OF COMMUNICATION



Today's management answers today's competition with ever-better tools of communication—tools which provide a bigger day's work in less time at lower cost. High on management's list of 'better ways' is the proper dovetailing of machine and method. Example—the perfect fit which comes from using the new Royal Electric Typewriter in combination with McBee systems, forms and procedures. Royal McBee users are proving these facts in every type of business activity.

SUMMARY OF RESULTS

for three months and nine months ended April 30th

	Three Months		Nine Months	
	1955	1954	1955	1954
Income from Sales of Products, Services, etc.....	\$21,546,186	\$20,190,061	\$60,933,436	\$61,470,261
Net Profit after Depreciation but before Federal Taxes on Income.....	\$ 2,013,531	\$ 1,593,487	\$ 4,555,778	\$ 4,583,460
Provision for Federal Taxes on Income.....	1,013,144	874,129	2,290,461	2,406,477
Net Profit after Depreciation and Provision for Federal Taxes on Income.....	\$ 1,000,387	\$ 719,358	\$ 2,265,317	\$ 2,176,983
Earned per Share—Common Stock.....	\$.69	\$.47	\$1.50	\$1.43

(subject to year-end audit)



ROYAL MCBEE CORPORATION

2 PARK AVENUE, NEW YORK 16, N. Y.

The Future of Business

RAGNAR D. NAESS*

RIGHT NOW WE ARE in a very happy position in the United States of having a business recovery which has proceeded far enough so that we have extraordinarily good conditions, and yet it has not gone far enough to create excesses and maladjustments which, in due course, would create a decline or readjustment in business. It is one of those happy junctures that economists dream of, and I would like to say a few words about the reasons that I ascribe for that condition first, and then I would like to discuss the outlook and perhaps add a little about stock prices and the market.

The reasons why we are in this head position, as far as I can discern, can be attributed to the developments last year, in 1954, when we went through a period of liquidation, of retrenchment. We had a tremendous inventory liquidation movement last year, and I doubt whether people fully realize how big it was. In every industry with few exceptions that took place.

Now, then, normally when we have a situation like that, it could easily develop into a deflationary spiral. That did not happen. I think there were several reasons why it did not happen, and I think that the number one reason was that we had a colossal bank of unfilled orders for capital goods and construction.

As you probably all know, at the end of the Korean conflict and for a couple of years thereafter, we built up a tremendous defense establishment, and we had an accumulation of orders for machinery from the Government that was previously unheard of, which for many companies ran as long as a year or two years. Similarly in the field of construction, because of the lack of construction in earlier years, we had a tremendous potential backlog of a great number of different types of heavy construction.

In early 1953, we experienced a situation that required inventory liquidation because there were excesses in many industries. We could take that inventory liquidation movement against the background of continued high rates of activity in capital goods, against the background of continued high incomes, against the background of continued high level of jobs. In other words, we could liquidate inventory in consumer-goods industries on a big scale and in raw-material industries, and yet we could proceed with a sound situation, simply because heavy industry continued to ship and produce against a backlog of unfilled orders.

THE WESTINGHOUSE REPORT

Of course, at that time not so much was said about that, but I think you are all familiar with the Westinghouse Report, in which it was stated categorically that unfilled orders were declining throughout 1954, and there were many other examples. So that is the second reason why it was possible to have the inventory liquidation movement without having it spiral.

There were other reasons, too. The monetary authorities initiated a very easy-money policy, which helped very much. The Government began to ease up on financial requirements for residential housing. But I think that the first reason and the two others were the principal ones why we did not have a real liquidation movement in business in 1954.

THE STEEL INDUSTRY

Now I might, in passing, say that the best example I know of this situation is in the steel industry, which throughout 1954 was reducing inventories from the source of production right through to the ultimate consumer. And at one time it was so high that consumption was running about 80% and production was running nearer 60%.

Well, then we came out of that situation in the fall of 1954, and we are now up substantially from the bottom, but we are still not accumulating inventories. We are still not really having any excesses in any major field of activity. I think I can state that categorically. I would say, for example, that, in the steel industry, the first month there was any inventory accumulation that was worth while was in March.

The two industries that are continually in the public press are the automobile industry and residential housing. The automobile industry, I think, is a marvelous example of American ingenuity and good management because they have bowled the public over with models. They have really captured the imagination of the public and they are getting an ever larger share of the consumers' dollars.

The sales of automobiles are so good that even today I doubt that new-car inventories are excessive. Used-car inventories may be excessive, but not by much. This, of course, is at the expense of the dealer to a great extent, but I think that it is all to the good because the consumer is the one who should be served.

The other industry, residential building, has somewhat the same flair, because there too the American public is looking for a higher standard of housing, which he can get. People are moving to the suburbs.

They need more room because the average family has more children than previously. They can finance on incredibly easy terms, and, even though these are a little tighter than they were recently, I do not see any evidence in the near future of any reversal in the residential building field adjusted for season.

So there we have two industries that are in the vanguard. There are other industries that are not quite so advanced, but they are coming forward, and the important thing is that there are not yet any evidences of any real maladjustments in furniture, furnishings, appliances, textiles, food, manufacturing or any important industry. There was some overproduction perhaps of radios and television sets, but that is being corrected.

Now all this means to me that business is going to be

*Naess & Thomas.

good for some period ahead, but even more important is the big rise that has taken place in the last two or three months in orders for machinery and equipment, because that was the weak spot last year. And the amazing thing to me is the extent of that recovery, whether it be machine tools, mining or construction machinery, farm equipment, or any one of a number of other types of industrial machinery. The orders are so favorably situated now that the backlogs are again increasing, and that to me indicates a situation in which business can continue to be good for longer than three or six months, a situation in which business might be good into 1956.

I would say this: that, for a real vulnerable position to develop in our economy today, we would have to have excesses accumulating for at least six months in a great number of important industries, and that is not in the cards as yet. That may come, but, if it doesn't, we can keep going at a good level for many months ahead.

If it should happen in the next few months, we will of course then get a setback later in the year, but I doubt that it will happen, because businessmen are very conservatively inclined today. They are looking at this picture with amazement. They do not understand how business can be so good. Something must be wrong.

What is wrong? Well, one thing wrong is that we might perhaps have a strike.

However, I have a strong conviction that we will not have an automobile strike. I think that the Ford Motor Company is going to accept the annual wage idea in principle, and that there will not be an automobile strike. Of course, that might not be good because perhaps a strike in the automobile industry would reduce their inventories. However, I do not believe that the industry is producing heavily just because there might be a strike, and I do not believe there will be one.

Then, of course, we have the possibility of war. In my opinion the international situation is easing up. I have not thought that we were facing a Third World War and now I expect it less than ever. I think that the chances of peace are improving, that we will learn how to live together in this world, that the situation is going to be solved in one way or another without a Third World War, and perhaps even without small wars.

BUSINESS MAY DECREASE ABROAD

Then we have the possibility that business may decrease abroad. Conditions overseas are extraordinarily good, and I do not believe that they are vulnerable yet. I think that the possibilities of continued good business all over Europe are excellent, and I believe that they will continue to be a supporting factor in the American economy as they were last year, and that similarly the American economy will be a supporting factor to Europe. There might be a credit squeeze, although I do not believe that business will go on such a boom that there will be much of a squeeze.

So looking at the picture as a whole, it seems to me that we are going to make new high records. I believe that gross national product right now is running at \$390 billion a year, which is very much up from the low last year of \$356 billion. It is actually a new high record.

I think personal income payments are now running in excess of \$300 billion a year for the first time. Retail sales are making a new high. The thing about this boom is that it is supported as yet by consumption, which is the important thing.

Now I shall spend a few minutes on two other things: If this boom continues into 1956, it has obvious implications of national importance, because it will enable the Government to reduce taxes, for example, on personal incomes as well as on corporations, and it will certainly make it possible for the present administration to show a good record when it comes to the national elections.

Another observation regarding the stock market. A favorable background exists today for the stock market, and yet people are cautious still about stocks.

FULBRIGHT COMMITTEE FIGURES

You may have seen the latest figures prepared by the Fulbright Committee which shows that, over the last few years, stocks have been bought by institutions and not by individuals to any great extent. Individuals have not been in this market on any big scale. And, despite the increase in debits and so forth, in relation to the total amount of buying done, individuals have been buying fewer and fewer stocks.

Obviously the market today is no longer on the bargaining table. It is fully adjusted to the tremendous inflation that we have had in our country. If we have a deflationary trend, the market can go down, but, in view of the situation as I see it, I think the danger of the market rising to higher levels, to more speculative levels is certainly greater than any danger of substantial decline.

And with that I shall make a closing remark. As we get into the situation and if the market should rise, I believe that we as security analysts have a tremendous obligation to advise people not to go along with rising and more speculative markets too far, because such prices are much too high in relation to values, and, regardless of how favorable the business outlook is, it will become desirable to cut stocks down. I do not think that they should be cut down today, but I believe that is a problem that we might well have with us within the next 12 to 18 months.

QUALITY ALWAYS COUNTS

Another thing that is important is simply this, that quality always counts. We know from past experience that, in a period such as we now may be facing, a lot of speculative stocks are going up a great deal more than the high-quality stocks, and yet I would say I would prefer to hold onto high-quality stocks rather than the speculative ones, because, if the situation changes unexpectedly, I would at least have good securities that would let me sleep well instead of possessing securities that might be highly questionable.

So I think the situation is fine. It will continue very good. I am worried lest the market is going to rise too high. When I say that, I do not mean 10 or 20 points. I mean 100 points. I am afraid that we might get into a situation in which we have to be much more cautious and take a very different point of view toward the stock market than we have in the past five years.



Progress Report 1954

Safeway's Story in Figures...

	1954	1953
SALES	\$1,813,516,636	\$1,751,819,708
Income from dividends, interest and other sources	226,002	283,199
Cost of merchandise—paid out to farmers and other suppliers of goods and expended for manufacturing and warehousing	1,531,502,208	1,484,147,500
Total operating and administrative expenses, other charges and provision for income and excess profits taxes	268,256,659	253,410,675
NET INCOME	13,983,771	14,544,732
Dividends to preferred stockholders	1,915,397	1,914,418
Net Profit applicable to common stock	12,068,374	12,630,314
NET PROFIT PER SHARE OF COMMON STOCK based on average number of shares outstanding during the year	3.52	4.31
Dividends to common stockholders	8,336,264	7,090,916
Dividends per share to common stockholders	2.40	2.40
Number of new stores opened during the year	44	16
Number of stores closed during the year	83	71
Number of stores in operation at end of year	1,998	2,037

Quick Facts:

Safeway set a new sales record in 1954. Total net sales showed an increase of \$61,696,928 over 1953.

Due to the Company's decision to meet trading stamp competition head-on throughout its operating territory, net profit was slightly less than earned in 1953.

All of the Company's 4½% Convertible Preferred Stock was called for redemption April 1, 1954. All outstanding Convertible Preferred was converted into common stock.

April 21, the Company issued and sold 267,000 shares of new 4.30% Convertible Preferred Stock. Proceeds from the sale were applied on short term bank loans.

Uninterrupted cash dividends have been paid on all outstanding shares of Safeway's common and preferred stocks since the Company's incorporation in 1926.

1954 was impressive from the standpoint of Safeway's construction program. 44 new retail stores, 39 in the United States and 5 in Canada were completed.

74 retail stores were under construction and should be completed by July, 1955. Plans and specifications were prepared or in the process of preparation for 94 retail stores. These stores should be in operation before the end of 1955.

Excellent relations existed between Safeway, its employees and their union representatives during 1954. No serious labor controversies or work stoppages took place during the year and none existed at the year end.

Liberal group insurance, retirement and profit-sharing programs are available to Safeway employees.

Lingen C. Warren
President

LIBRARIAN, SAFEGWAY STORES, INCORPORATED
P. O. Box 660, Oakland 4, California

Please send copy of your 1954 Annual Report

AJ

NAME _____

STREET _____

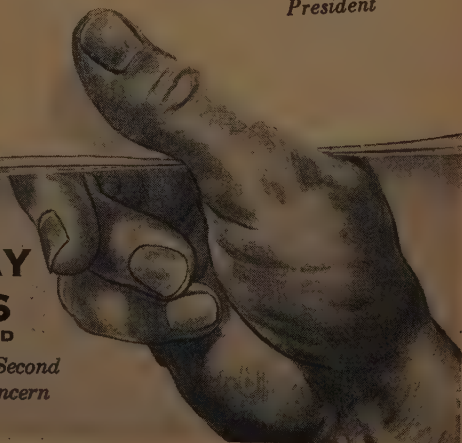
CITY _____

ZONE _____

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SAFEGWAY STORES INCORPORATED

Safeway is the World's Second Largest Retail Food Concern



NEWS OF THE FUTURE FROM CRANE



Every jet, bomber, fighter and military transport plane uses equipment made by Crane's aviation subsidiary, Hydro-Aire, Inc., and every major air line uses fuel valves engineered and manufactured by this Crane subsidiary.

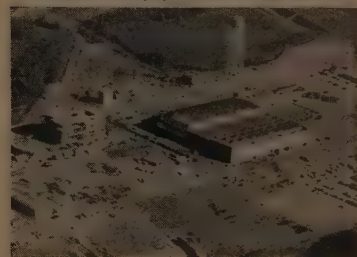
Always a growth company, Crane in its Centennial Year, is pioneering for its second century. During the past decade, the company has entered several fields of diversification, each with a potential as large as the company itself.

As Crane celebrates its hundredth birthday, it is a leading factor in aviation, atomic energy, and titanium production, as well as valves, fittings, pipe, kitchens, plumbing and heating.

CRANE CO., 836 South Michigan Avenue, Chicago 5, Illinois



Nuclear power. Crane leads the field in the development of valves and controls for harnessing nuclear power. Aboard the atomic submarine, *Nautilus*, and in every nuclear reactor plant this side of the iron curtain, Crane equipment is being specified.



Heavy metals. Crane will soon be producing annually more of the vital metal, titanium, than had been produced in all the world in 1953! Mining and producing pure titanium is only one aspect of Crane's program in heavy metals and rare earths.



Aviation. Crane's subsidiary, Hydro-Aire, Inc., manufactures Hytrol, the new anti-skid braking device that enables larger, faster planes to stop with greater safety in much less than the normal distance.



Keeping ahead. Crane strengthens its hold on the plumbing and heating market . . . through new products, advanced design, strong advertising. It's the name most people think of when they think of plumbing.

CRANE

**CRANE STARTS ITS
SECOND CENTURY OF QUALITY
Founded July 4, 1855**

CHAIRMAN
HAL KENNEDY
Kansas City Fire & Marine
Insurance Company

MODERATOR
JOSEPH M. GALANIS
R. L. Day & Company

Building and Construction Industries

The Home-Building Industry Today

RICHARD G. HUGHES*

FOR THE PAST SEVERAL MONTHS, there has been a barrage of feature articles and news stories in newspapers and magazines comparing views of analysts and lenders expressing concern over overbuilding, excessive mortgage debt, and current financing practices.

I am not an economist. I am not a financial analyst. I am just a home builder from the wind-swept plains of the Panhandle of Texas. For the past 60 days, I have been trying to convince New York bankers that the little dust that occasionally drops into our area from the states north and west of us should not make mortgages on homes completely unsalable.

FUTURE OF HOUSING

Although I am neither an economist nor a financial analyst, I am concerned about anything that affects the future of housing. While serving as a member of President Eisenhower's Committee on Housing Policies and Functions in 1953 and while serving as president of the National Association of Home Builders in 1954, I diligently studied housing in America as it is, and then, just as sincerely, I tried to visualize housing in America as it should be. During the time allotted to me, I could not possibly detail either my analysis of the need or my proposal or solution to that need.

As a home builder, I have been subjected to severe criticism for many years. Ten years ago, a leading magazine wrote a story on housing entitled "The Industry That Capitalism Forgot." "Do-gooders" in Washington charged that the home-building industry could not get the job done. So great was the need for housing that it was called "a scandal and a disgrace." So many hundreds of thousands of families were doubled up, living in trailers, shacks, and attics. These same "do-gooders" charged that the industry just could not solve the problem.

Then, in just five years, the Government cried, "Will the industry build too many houses?" In October 1950 they

got limitations and regulation X. That passed. The industry began again to break the million-house-a-year mark. Families got undoubled, and vacancies began to appear in some areas, and the question was once more: "Are we building too many houses?"

MANIPULATIONS WITH MATERIALS

During all these periods, there were manipulations with materials—CMP—and the money market was cutting parallel capers. When building was held down, mortgage money was plentiful, but it turned tight while the housing need was still so large that demand for houses and a close money market forced high discounts in 1953 to keep building going.

Then last year the money supply was up, and it began to flow in most areas. Discounts disappeared in some areas and were reduced in others, and we moved into 1955 with high promise—promise to break all past records in housing production.

Again, we face the question: "Are we building too many?" "Is there a need for the present volume?" "Is the mortgage debt too high?" "Where will we get the funds to finance this high volume of houses?"

HOUSING SHORTAGE IN 1965

At the conclusion of my work with the President's advisory committee and as president of the NAHB in January 1954, I made this statement: "During the ten years that follow 1954, we must build an average of at least 1,400,000 new houses each year and, at the same time, new-condition an average of 600,000 of our 7 million existing slums each year, which do not contain such conveniences as inside plumbing, or we will be faced with a housing shortage in 1965 that will be much greater than the housing shortage of 1945." My opinion of that statement has not changed. I am fully convinced:

1. That today's home-building volume is clearly sustainable, on the basis of both need and demand.
2. That current mortgage practices are sound — even

*Recent president, National Association of Home Builders.

though, in some areas, there have been some unsound practices that have slipped into our over-all program which should be changed.

3. That the level of our mortgage debt should be continually studied, but that is not a matter for grave concern.

THE BUILDING VOLUME

Last year, we built 1,215,000 units, in spite of some very serious criticisms which were heaped on the industry by the FHA investigation. Last year I visited with home builders in more than 200 cities in all parts of the Nation. I know thousands of builders personally. My recent contact with those same builders indicates that they are building closer to the belt than ever before.

RECENT SURVEYS

The practice of building models, selling from the model, and building the houses after the sale is more extensive today than ever before. Surveys made during the past two weeks indicate that:

1. Sales are good, but the unsold volume of completed housing is lower than it was during the latter part of 1950 and the early part of 1951.

2. However, the volume is being cut back somewhat and probably will not attain, by the end of the year, the figure that is now projected.

One of the very strong curtailing factors is the slowness of VA and FHA processing time. The processing time varies up to as high as four months.

If we assume that a builder is building six \$10,000 houses per week, and the processing time after the house is sold is two months, then under no condition would the builder's completed sold housing inventory be less than \$480,000. At the same time, the builder would have to have sufficient credit to carry his incompleting inventory.

Since the average builder does not have the necessary funds nor the necessary credit to carry such an inventory, I find that builders everywhere are cutting back on their production, because they just do not have the funds to carry such large volumes of completed housing inventory during these long processing periods. A recent analysis of a report from local real estate boards through NAREB emphasized that, while apartment vacancies were up, single-family vacancies, for sale or rent, were scarce.

BUILDING FASTER THAN FAMILY FORMATIONS

A main source of worry of critics for housing is that we are building faster than our new family formations. Immediately following World War II we were selling to new family formations, but the main sources of our sales today are not to new family formations. The main sources of sales today are created by the fact that we are building larger, better-built, and better-designed houses, through either a direct or an indirect trade-in system, to families whose incomes and number of children have outgrown the small two-bedroom house which they bought several years ago.

As in other industries, we have found that changes in design and improvements in quality are important factors in stimulating consumer demand. Years ago, automobile

dealers, in order to survive, learned to trade. In many areas, we too are learning that art and trade-ins represent a large portion of our sales.

SINGLE PEOPLE

Another very large source of sales which our critics do not consider is that single people are consuming approximately 150,000 of our new housing units per year. Another factor many do not consider is the change in attitude toward home buying. The most recent FRB survey of consumer intentions reported that 9.6% of all consumers plan to buy homes this year, the highest proportion since the study began, and that demand will continue certainly into 1956. The underlying reason for this good demand seems to be as follows:

1. The population pressure:

(a) Births—highest in history—4.1 million in 1953.

(b) Net additions—up to 190 million in 1956—3 million a year.

(c) 30 million moving each year, 9 million families.

(d) Family formations falling, but they will rise again, and the family formation factor in home buying, as previously stated, is supplemented by thousands of individual single people who are buying homes each year today.

2. Rising living standards: Home ownership has been a desirable goal in itself for most families, and housing is achieving a higher preference among consumer demand, as indicated by the FRB survey. The house in which one lives has become more than ever a mark of achievement—a desirable objective.

Consumers are better able to satisfy their demands today because they bring home bigger paychecks. The typical nonfarm consumer family had, in 1953, an income of \$5,250, up nearly 20% from 1947, even when adjusted for price changes. Nearly two thirds of our urban population had incomes between \$4,000 and \$7,000. Only 5% had less than \$2,000. The great evolution in consumer income is the greatest factor in the home buying today.

MORTGAGE PRACTICES

I recently saw a study of 1.7 million mortgages held by members of the Mortgage Bankers Association which showed the following delinquency ratio: FHA—delinquent three or more months—0.15%, VA—0.22%, conventional—0.18%. No convincing evidence has ever been presented to me which would indicate that the delinquency problem on homes financed under liberal terms is seriously different from delinquencies on other types of loans.

I personally do not believe that the soundness of a loan can be measured automatically by the down payment or that a slightly higher down payment protects the buyer against all hazards in the future. During the past ten years, I have built and sold about 6,000 houses on some type of VA or FHA loan. Most buyers measure the equity in their home as being different from the equity in their house.

OPPOSED TO NO DOWN PAYMENT

However, I have strongly opposed the no down payment. I believe that a buyer should have some equity in

his house. I urged the VA to do away with the no down payment when I was still president of NAHB, and the NAHB board of directors passed such a resolution at their meeting last January in Chicago. The foreclosure rate today is also extremely low—3 per thousand mortgage properties in 1954 compared with 9 per thousand in the '40's.

Of course, this home-building program must be financed. If we continue to build at the present high rate and increase our production in accordance with the increased population, we must find new sources for mortgage money from some place. I certainly do not want the home-building industry to play even a remote part in some sort of "economic collapse," as predicted by some of these bearers of "gloom and doom," and, since I am not an economist, all I can do is read figures and make comparisons.

SIZE OF DEBT IS LARGE

The size of the debt, they say, is dangerously large. True, the total mortgage debt at \$111 billion, including commercial and farm properties, and the home mortgage debt at \$75 billion are at high levels. But, to be dangerous, they must be higher in relation to what supports them.

The mortgage debt in the last twenty years has increased at a less rapid rate than either the gross national product or the national income. In 1954, the mortgage debt was 37% of the national income; in 1940, 45%; and, in 1930, 62%.

1-TO-4-FAMILY HOMES

For one-to-four-family nonfarm homes, the mortgage debt has increased at a somewhat more rapid rate. In 1954 it amounted to 29.5% of the national income, compared with 22.7% in 1940 and 25.4% in 1930.

However, this analysis by itself ignores the fact that the debt today is spread over so many more families and that these families have far greater debt-carrying capacity than the families who carried the debt in the 1930's. For example, the mortgage debt in 1940 was 166% of the income of home owners (assuming all families had the same average income).

In 1950, it was only 96%. True, the debt is a burden on these families, but so was the rent they formerly had to pay every month. "As long as the amortized payment is equal to or less than normal rent, I do not believe that the amortization of a mortgage is dangerous or hazardous to this Nation," because these families must live some place, and, if they are not amortizing a mortgage, they are paying a similar amount for rent.

MORTGAGE DEBT IN SOUNDER SHAPE

I agree with the Chase National Bank: "Mortgage debt is in far sounder shape today than in the past." The First Federal of Chicago, one of the most influential savings and loans, says "The enormous and rapid increase in . . . mortgage debt has prompted many . . . to express concern over the soundness of our real estate financing, and to worry lest such 'top-heavy' debt collapses one of these days . . . the facts do not seem to support such an alarming conclusion."

In the face of these and other statistics that could be quoted, it is my opinion that today's high volume gives this industry a wonderful chance to upgrade and improve the housing of the American people on a scale never before possible. If we do not seize this chance, we shall not have the opportunity to do so when the tremendous demand of the '60's is upon us.

HOUSING NEED OF THE '60's

The housing needs of the '60's will present a problem that this industry must meet, face, and begin to prepare for today. We must prepare for it by upgrading our existing housing inventory, two thirds of which is twenty-five or more years of age; we must clean up the 7 million delapidated slums; and we must provide housing for the 16 million American Negroes, a problem that has been largely overlooked. We must do these things during the next ten years because we will not have time, materials, money, or man power to do anything about these problems when we are faced with the tremendous new family formation problem of the 1965's.

The question is: "Where are we going to get the money?" I frankly do not know. But, in my opinion, each segment of the industry must do its part.

OBLIGATION OF PROVIDING MATERIALS

Manufacturers must accept the obligation of providing materials. Home builders must accept the obligation of assembling the houses designed to meet the then current demand. Realtors must sell them, and lenders must accept their obligation and provide the money. It is my opinion that this industry must work together more cooperatively and collectively than ever before, if we are to meet the housing problems that face us—if we are to get ready for the new housing boom which is sure to come in 1965, and if we are then able to provide at least 2 million new homes each year and, at the same time, conserve the existing housing inventory.

Common and Preferred Dividend Notice

April 28, 1955

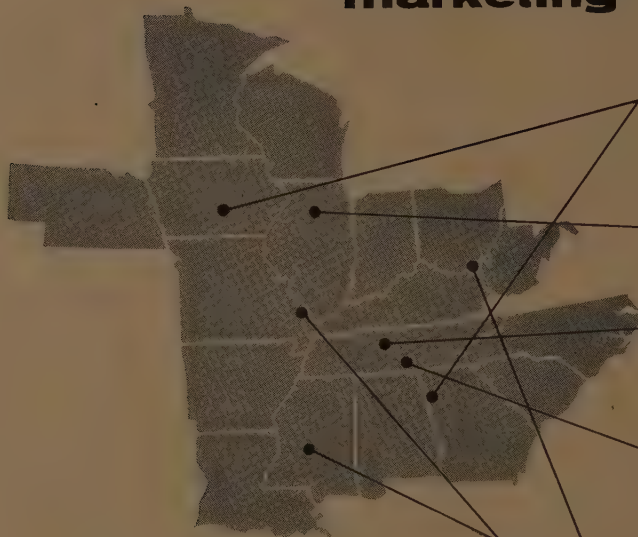
The Board of Directors of the Company has declared the following quarterly dividends, all payable on June 1, 1955, to stockholders of record at close of business May 10, 1955:

Security	Amount per Share
Preferred Stock, 5.50% First Preferred Series	\$1.37½
Preferred Stock, 4.75% Convertible Series	\$1.18¾
Preferred Stock, 4.50% Convertible Series	\$1.12½
Common Stock	\$0.35

W. H. Jones
Secretary

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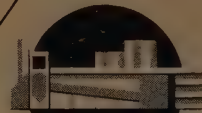
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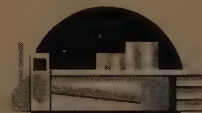
**Annual capacity
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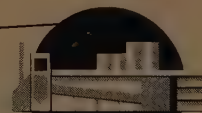
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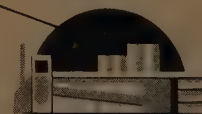
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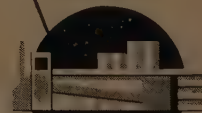
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The Construction Outlook

THOMAS S. HOLDEN*

THE LETTING OF CONSTRUCTION CONTRACTS and the execution of construction projects continue at record-breaking rates. The year 1955 will probably prove to be the eleventh consecutive year of construction volume increase.

Although this record is probably without previous precedent, it should not be considered surprising in view of the rapid expansion of the Nation's economy in recent years. There has been, during the past eleven years, little if any speculative building activity; no significant surplus of any class of structures has yet been produced. In fact, there are some important shortages, in addition to the continuing demands of a population increasing at the rate of 2,800,000 net new persons annually.

BARELY KEPT PACE WITH ECONOMY

As a matter of fact, recent construction volumes have barely kept pace with the growth of the economy. Last year's record total was only 28% over the peak volume of the boom of the 1920's, after allowance is made for the big change that took place in the value of the construction dollar.

Since the big boom of the 1920's, population has increased 35%, per capita incomes increased nearly 50%, and total output of goods and services has more than doubled. During the 1920's population increased 1,700,000 annually, whereas last year's increment was 2,800,000 persons. Economic growth is the great generator of construction demand.

A bigger and wealthier economy requires not only larger quantities of new structural facilities in all existing categories, but also an ever-widening range of new structural types and of structures built to improved architectural and engineering standards.

Numerous careful appraisals of the growth potentials of the United States economy indicate continued expansion as far ahead as the appraisers are willing to project their estimates. The prospect is not only for continued population increase but also for continued rises in productivity, per capita incomes, and living standards.

Principal dangers, under such conditions of strong potential demand, lie in the ever-present possibility of pushing production too fast for the market's capacity to absorb. In the range of construction activities, this danger is perhaps strongest in the field of private residential and commercial buildings.

Recently the notion has been current that residential building may have been moving ahead too fast. Actually, no strong case has been made to support that contention. Conclusions have been drawn from apparent wide discrepancies between figures on household formations and nonfarm dwelling-unit starts.

In the first place, figures on household formations are

more nearly measures of present occupancy than of potential housing demand. Second, they are estimates based on sampling surveys and subject to sizable margins of error. Third, the statistics usually quoted compare over-all figures, including both farm and nonfarm households, with current nonfarm dwelling starts, which is unsound. Farm households declined by an estimated 600,000 from 1950 to 1954, so that nonfarm households increased by 600,000 more than total households did.

In 1925, peak year of the housing boom of the 1920's, 937,000 nonfarm housing starts represented 4.6% of the number of existing nonfarm households. In 1950, peak thus far of postwar housing activity, 1,396,000 nonfarm housing starts represented only 3.7% of the number of existing nonfarm households. In 1954, 1,215,000 nonfarm housing starts represented only 2.9% of the number of existing nonfarm households.

LARGE-SCALE MIGRATION

A demand factor of considerable importance has been large-scale migration of population. In the year ending March 31, 1954, some 29 million persons moved from one address to another; 5 million of them moved from one state to another. Also, it is reasonable to assume that the number of existing dwelling units disappearing from the market annually is considerably greater than it used to be.

Another pertinent consideration is that most of the bulge in housing activity since mid-1954 has been in units financed by Veterans' Administration loans. This is not surprising in a period when the Armed Forces have been reducing personnel and releasing larger numbers of servicemen to civilian life.

The Veterans' Administration recently announced a moderate tightening of housing terms which have been criticized as overliberal. Until unsold houses begin to accumulate in numerous local markets, it cannot be said with assurance that houses are being built too fast. Current residential activity consists so largely in single-family houses built for sale that rental housing is a quite minor factor at the present time.

Although commercial buildings can conceivably be overproduced on a speculative basis, there is no evidence that any such thing has been happening. Since retail trade follows population, it is quite natural that the big residential building activity in suburban and outlying areas should be accompanied by numerous store and shopping-center projects.

New office-building projects in central urban areas are, for the most part, merely catching up with the space demands occasioned by practically universal expansion of business activity. The type of speculative financing of such projects with public participation that was rife in the 1920's has not reappeared and scarcely seems likely to.

*Vice-chairman, F. W. Dodge Corporation.

In the field of publicly financed community facilities, an effective brake exists in the taxing power of local governments. Although such governments are increasing their levies as much and as fast as they can, they are barely keeping up with the needs for new schools, expanded water supply, and other needed public improvements.

It may confidently be stated that there is no danger of overdoing construction in these categories; on the contrary, the tendency here is for performance to lag behind needs. This is notably true with respect to new schools, of which there is a Nation-wide shortage. The same is true of highways.

During the first four months of this year, there has been an upturn in manufacturing buildings, a class of operations that has been on the decline since 1951. That such an upturn would come had been obvious for quite a while, since an economy that is acquiring 2,800,000 new customers every year must sooner or later increase its production facilities.

ELECTRIC UTILITY INDUSTRY

Some time ago, the electric utility industry announced that it would double its 1953 capacity by 1963; the chemical industry expects to increase its capacity by 75% in the same ten-year period. Other industries and corporations have announced large-scale expansion programs.

I see nothing in the current construction picture to cause any great concern. However, I am inclined to question whether the rapid rate of contract letting that has been in evidence thus far this year is likely to be maintained throughout 1955.

During the first four months of this year, building and engineering contracts reported by F. W. Dodge Corporation for the 37 eastern states amounted to \$7,542,497,000, which was 35% ahead of the corresponding period of last year. This compares with a conservative 6% increase that we estimated and published last November for the full year 1955.

LIKELY TO BE EXCEEDED

As of now, I would say that F. W. Dodge Corporation's early conservative estimate is quite likely to be exceeded. But I do think that some narrowing of the spread between this year and last would make for reasonable stability in the industry and for continuity of demand.

Even with a glowing prospect of continuing construction demand at very high levels, it is quite possible to move ahead too fast and thus incur the necessity for a market correction at some future time. Barring war or other catastrophe, the prospect of any major setback seems very remote indeed.



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Types and Sources of Home-Mortgage Financing

MORRIS D. CRAWFORD JR.*

IT IS MY ASSIGNMENT to discuss the types and sources of home-mortgage financing. Throughout I shall refer principally to the financing of nonfarm, one-to-four-family dwellings.

First, I should like to define the three main types of home mortgage, namely, the conventional, the FHA, and the VA (or GI), and at the same time give you a brief history of each in order to place my subject in perspective.

Because of the extensive publicity that has attended the FHA and the GI mortgages, one would suppose that these two types accounted for the great majority of mortgages. As a matter of fact, however, the conventional mortgage still predominates. At the end of 1954, 52.9% in principal amount of all one-to-four-family home mortgages were conventional, 24.7% were GI, and 22.3% were FHA (p. 26)†

THE CONVENTIONAL MORTGAGE

The conventional mortgage is a first lien on real property. It has the benefit of no governmental or other guarantee of payment. The lender relies solely on the ability of the borrower to pay and, in the event of default, on the realizable value of the property. Savings banks and insurance companies are generally limited, in conventional mortgages, to loans not in excess of 60% to 66 2/3% of appraised value. Savings and loan associations may go as high as 80%.

In the halcyon days of the '20's, the conventional mortgage was the only type that existed. It was usually written for a three-to-five-year term‡ and, in many instances, with no provision for amortization. Both borrower and lender expected that the loan would be refinanced at the expiration of each term at the then prevailing interest rate. When the great depression came, the unsoundness of this philosophy was cruelly demonstrated.

THE FULLY AMORTIZING TYPE

The modern, fully amortizing type of mortgage had its birth in 1934 with the creation of FHA. In the previous year, 1933, nonfarm foreclosures had reached an all-time high of 252,400.

To illustrate the magnitude of this situation, it need only be recalled that foreclosures for the entire postwar period 1946-54 have aggregated only 156,985. In other words, foreclosures in 1933 alone exceeded by 60% the aggregate of all postwar foreclosures. Likewise, in 1933 the construction industry had almost ground to a halt—nonfarm housing starts were at a low of 93,000, as opposed to an

annual average in excess of 700,000 in the decade of the 1920's (p. 4).

In 1934, the House Committee on Banking and Currency, after extensive hearings, took note of the desperate conditions that prevailed in both home owning and home building. The committee found that the mortgage distress of that period was due not so much to unemployment of home owners as to their inability to refinance the short-term mortgages which were then coming due at the alarming rate of \$2 billion per year. From this finding came recognition of the need for a type of home financing that was both *long term* and *fully amortizing*.

NATIONAL HOUSING ACT

These requirements were written into the National Housing Act of 1934, which created the FHA. That pattern, now accepted as normal, was a radical departure from traditional home-mortgage financing in 1934 and was accepted by lenders with great reluctance.

The National Housing Act of 1934 authorized the FHA to insure private mortgage loans. A mutual mortgage fund was established with Federal funds, and later augmented by insurance premiums and other charges paid by borrowers. (I should remark, parenthetically, that the entire debt of the FHA to the Federal Government has been completely discharged.) The FHA mortgage insurance is ultimately backed by the U. S. Government. For this insurance, the mortgagee collects from the mortgagor and pays to the FHA an annual insurance premium equal to one half of 1% of the outstanding principal balance of the mortgage.

FHA INSURANCE

To be eligible for FHA insurance, a mortgage must be self-liquidating, must bear interest not in excess of 4½%, must be for a term of thirty years or less, and must meet other specific requirements of the Federal Housing Administration. For example, the underlying real property must be appraised by the FHA, and the mortgagor must be approved for credit.

On default, in order to realize on the FHA insurance, the lender must foreclose the mortgage and convey an acceptable title to the FHA. In return, the lender will receive debentures equal in principal amount to the unpaid mortgage plus certain expenses of the lender.

The debentures bear such rate of interest as may be fixed by the Commissioner at the time of endorsement of insurance. The present rate is 2½%. It is fixed from time to time by the Commissioner, with the approval of the Secretary of the Treasury, at a rate that approximates the average yields to maturity of comparable marketable obligations of the United States.

Until last August, the FHA required a 20% equity. As a result of the Housing Act of 1954, the FHA will now insure home mortgages up to 95% of the first \$9,000 of appraised value and 75% of any excess. This was the

*Vice-president and office counsel, Bowery Savings Bank.

†Throughout, page numbers refer to *Housing Statistics*, January 1955. This is a monthly publication of the Housing and Home Finance Agency.

‡The building and loan type was written for a longer period, up to twelve years.

only important liberalization of home-mortgage terms effected by the Housing Act of 1954.

THE GI MORTGAGE

The next important step in our historical sequence is the advent of the GI mortgage. Partly as a result of the creation of the FHA, new home construction had grown steadily from a low of 93,000 in 1933 to approximately 700,000 in 1941. This growth was, of course, interrupted by World War II. During the entire four-year period 1942-45, inclusive, housing starts aggregated less than 900,000 for an average of less than 250,000 per year.

As the end of World War II approached, the Servicemen's Readjustment Act of 1944 was passed, giving VA the authority to guarantee mortgages made by private lenders to veterans. Under the law as presently amended, eligible mortgages are guaranteed by the Veterans Administration to the extent of 60% of the loan or \$7,500, whichever is less.

GUARANTY ABATES PROPORTIONATELY

As the loan is amortized, the guaranty abates proportionately. No equity money is required. As a matter of fact, the regulations have always permitted "no-down-payment" loans.

Contrary to the general impression, "no-down" loans were *not* first authorized by the Housing Act of 1954. They came into prominence in 1954 only because in that year for the first time many of the large institutional lenders entered the market for "no-down" mortgages.

THE VA GUARANTY

The mortgage, to be eligible for VA guaranty, must cover a property that meets the appraisal and other requirements of the VA. The mortgagor must meet VA credit standards. If all requirements are satisfied, the VA issues a certificate of guaranty which, in the absence of fraud, is incontestable by the Government. Incidentally, the FHA insurance is also incontestable.

On default, the holder of a VA mortgage is entitled to receive from the Veterans Administration cash in the full amount of the guaranty, usually 60% of the outstanding principal amount. The lender then proceeds with his foreclosure action, notifying the VA before the proposed sale.

The VA normally fixes an upset price, and the lender bids up to, but not exceeding, this price. If he is the successful bidder, he has the option of conveying the property to the VA and obtaining in cash from the VA the balance of his claim, plus interest and expenses.

Thus, even though the veteran makes no down payment, the Government of the United States in effect supplies the lender with a 60% equity in the form of a guaranty, reducing the lender's exposure to 40%, or, for loans in excess of \$12,500, the difference between \$7,500 and the total amount of the loan.

We believe that the long-term and fully amortizing features of the present-day mortgage have put home financing on a sound basis. This is reflected in current delinquency figures.

The Bowery Savings Bank has a total of 55,717 one-

family home mortgages, including FHA's, VA's, and conventional. As of March 21, only 64 of these mortgages (or 0.114%) were in arrears for 90 days or more.

MAJORITY WILL NOT INVOLVE FORECLOSURE

Based on past experience, it is safe to say that the majority of these loans will be returned to current status and will not involve foreclosure. I believe this is representative of the general experience of lending institutions today.

It is argued by some that these phenomenally low delinquency figures are not significant and merely reflect the high level of the economy and of employment. In answer to this, I would point out that, whereas foreclosures have averaged less than 18,000 per year in each of the nine post-war years, they averaged in excess of 102,000 per year in the peak years of the '20's (p. 33). Good times alone do not produce a low delinquency rate.

SOURCES OF MORTGAGE FUNDS

Let us now turn to the sources of mortgage funds. At the end of 1954, the outstanding mortgage debt on one-to-four-family houses stood at \$75.5 billion—an all-time high. This represented an increase of over 300% since the end of World War II. The debt was held by five principal holders:

1. Savings and loan associations.
2. Life insurance companies.
3. Mutual savings banks.
4. Commercial banks.
5. Individuals and others.

The last category includes title companies and all other nonfinancial corporate holders. A small amount of the mortgage debt is also held by various governmental agencies, particularly the Federal National Mortgage Association.

INDIVIDUALS HELD MOST

In each of the years 1925-45, inclusive, the category of "Individuals and others" held more of the mortgage debt than any one of the other categories. However, beginning in 1946, the savings and loan associations came to the forefront, and have since that year held a larger amount than any other category in each succeeding year. The percentage distribution of the present mortgage debt of \$75.5 billion is roughly as follows:

1. Savings and loans	33 1/3%	\$25 billion
2. Life insurance companies	20.3	15.4
3. Commercial banks	17.5	13.3
4. Individuals and others	14	10.5
5. Mutual savings banks	11.6	8.8
6. Government agencies	3	

Within the four categories of financial institutions, which account for all but 17% of the aggregate mortgage debt, the funds available for mortgage lending come from two main sources:

1. Savings in the form of bank deposits, insurance premiums, and share accounts in savings and loan associations.
2. Repayments on outstanding mortgages in the form of amortization and payoffs.

This second source is of ever-increasing importance. In the period of 1950-53, inclusive, repayments to mutual savings banks aggregated \$4,883 million, while the net increase in their savings deposits aggregated \$5,093 million.

Thus, for every dollar received from their *depositors*, the mutual savings banks received 96 cents from their *mortgagors* in the form of amortization and payoffs. In a recent speech, the president of the U. S. Savings and Loan, in commenting that loan repayments are becoming an increasingly important source of mortgage money, stated that, in 1955, the savings and loan associations anticipate \$5,250 million of new accounts and mortgage repayments of about \$4,750 million—or 90 cents per dollar of new accounts. Thus, the amortizing feature of today's mortgage not only creates a constantly increasing equity for the home owner and a decreasing exposure for the lender, but it also provides annually a substantial portion of the funds available for mortgage investment.

DEVELOPMENTS SINCE WAR

Finally, I would like to outline the developments in the mortgage market since the end of World War II. Preliminarily, I should say that the contract rate of insured and guaranteed mortgages is almost invariably fixed by lenders at the maximum permitted by law.

Accordingly, these mortgages respond to general changes in interest rates by selling at a discount or at a premium, depending on the rate trend. The amount of discount or premium will vary with the geographical location of the security and the equity or lack of equity involved in the loan.

FOLLOW TREND OF GOVERNMENT BONDS

In general, mortgage rates follow the trend of long-term Government bonds. There is a lag in the response of the mortgage market to long-term trends, principally because the mortgage market is dominated to a substantial degree by advance purchase commitments running into the future as much as 12 or 18 months.

At the end of World War II, the stage was well set for the dramatic increase in home-mortgage debt which was to follow. Partly as a result of the negligible number of housing starts during the war, and partly because of patriotic motives, the investment portfolios of financial institutions were then topheavy with Government bonds.

HAD REACHED ALL-TIME LOW

Mortgage portfolios had reached an all-time low. An unprecedented demand for new housing was created by the return of millions of war veterans, and the resumption of normal economic pursuits. To meet this demand, the housing industry moved into high gear, and the financial institutions proceeded to liquidate their bond portfolios to provide the necessary mortgage funds.

So long as the Government continued to peg the bond market, this liquidation process could be carried on in an orderly manner. The home-mortgage debt increased 150% in the first five postwar years.

Nonfarm starts increased steadily from 208,000 in 1946 to the all-time high of 1,352,200 in 1950. Throughout

most of this period, both FHA and VA loans were purchased by permanent lenders at a premium or at least at par.

In June 1950, the Korean war broke out, followed shortly by the issuance of regulation X in October 1950, placing a restraint on housing credit. Restrictions on building materials were put in force, and the Voluntary Credit-Restraint Program was initiated by the Federal Government.

ACCORD OF MARCH 1951

Close on the heels of these events came the famous Accord of March 1951 between the Treasury and the Federal Reserve, removing the peg from the Government-bond market. Since many institutions were depending primarily on the sale of Governments to provide mortgage funds, this action tended to dry up one of the main sources of mortgage money and to produce a tight mortgage market.

Immediately before the March 1951 accord, FHA 4¼'s had been selling at a 1-to-2-point premium, and 4% VA loans had been selling at par. Shortly thereafter, the premium on FHA mortgages melted away, and VA loans began to sell at a discount.

This continued through 1952. As we went into 1953, FHA 4¼'s were selling at about 99 to 99½, and VA 4's were down to 95 to 97½.

In April 1953, the Government announced the issuance of the thirty-year 3¼'s. Almost simultaneously the contract rate of FHA's and VA's was raised to 4½%.

In spite of these improved rates, the price of mortgages fell substantially. Many institutions were still relying on liquidation of their Government portfolio to provide mortgage funds.

The sharp drop in issues other than the new 3¼'s drastically affected the liquidation process, and a large part of available funds were attracted by the 3¼'s. It is not surprising that, during the last half of 1953 *both* VA and FHA mortgages, *even at the new contract rate*, were selling from 95½ to 97, and the old 4% VA loans went as low as 91.

POLICY OF ACTIVE EASE

In 1954, the Treasury and Federal Reserve pursued a policy of "active ease." As yields on Governments moved downward, funds became available once more in volume for the mortgage market, and the prices of mortgages began to firm up. By late 1954, prices ranged from 97½ to par; and, where servicing was relinquished by the originator, the prices went as high as 101.

At the end of 1954, and early 1955, the Treasury and Federal Reserve changed their policy from "active" to a plain garden variety of monetary "ease." At the same time a number of the larger institutional investors curtailed purchasing operations.

The result has been a firming up of mortgage rates. Prices have turned down once again, and discounts may increase further. If savings continue to slow up as they have in recent weeks, and if the Treasury and the Federal Reserve maintain present policies, it would not be surprising if discounts continued at present or even higher levels for the foreseeable future.



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The Building-Equipment Industry

JOSEPH A. GRAZIER*

I AM PLEASED to have the opportunity to participate in this discussion with you today. Although our corporation is active in many markets, we are primarily interested in construction.

For that reason, I was quite glad to hear Mr. Holden's optimistic forecasts. We share his belief that business in the housing field is going to be good. I was quite interested, also, in Mr. Crawford's analysis of the home-financing picture. Credit is, indeed, an important factor in the continued prosperity of the building industry.

STATE OF THE MORTGAGE MARKET

Listening to Mr. Crawford, I was reminded of a remark made recently by our economic consultant, Miles Colean. He gave what I thought was a very apt summation of mortgage psychology when he said: "It seems that no one is ever fully satisfied with the state of the mortgage market. When the supply of money is ample—and to some it always appears excessive—we are endangering the economy by promoting an oversupply of houses. When money gets a little tight—and to some it is never too easy—then we impair the economy by threatening to cut down construction."

Both Mr. Holden and Mr. Crawford, I am sure, will agree with me that population statistics and financial figures, as important as they are, do not completely describe or explain what is going on in the housing industry today. Behind those figures are people, within those people are desires, and in their pockets they have money to spend. That is what makes the construction industry tick.

A great number of people who will buy the new homes built this year are already living in homes that more than satisfy a sociological definition of shelter. They will buy comfort, convenience, beauty, pleasure, and prestige.

APPEAL OF NEW HOMES

The fact that modern homes have the appeal to cause hundreds of thousands of families to go through the inconvenience of transplanting themselves and undertaking larger investments is both a credit to the industry and an explanation of the continued high level of construction. Without the appeal which new homes have, the industry would be more closely restricted to the need level determined by new family formations, home obsolescence, and migration.

So let us take a brief look at the home of 1955. Let us see why it has the appeal that it does. Let us see what the trends are, and what the economic implications of those trends might be.

The appeal of the modern home, whether it is an apartment, a duplex, a cottage, or a mansion, lies in its design, its construction, and its equipment. As a manufacturer, I

am naturally in a position to speak more authoritatively about equipment than the other factors.

The mechanical equipment of a home is particularly important to builders and buyers alike. Plumbing, heating, and kitchens, for example, account for about 13% of the price of homes selling for \$18,000 to \$35,000.

Below that price level, the percentage figure decreases somewhat, running about 9% in \$12,000 homes. Those percentage figures, incidentally, do not include cooling, commonly called air conditioning, which I want to touch on in a moment. These product lines account for a sufficiently substantial part of the home to make them indicative of what is taking place in the housing field.

In plumbing, there are three major trends. People want bigger bathrooms, they want more bathrooms, and they want brighter bathrooms. Translated, that means they want comfort, convenience, beauty, and prestige—in bathrooms as well as other things.

THE PLUMBING BUSINESS

Plumbing manufacturers, of course, are glad that the home with the single 5-by-7-foot bathroom in unbroken white is on its way out. Their advertising and promotion are helping the trend along.

In virtually every part of the United States some heating is desirable for some portion of the year. In most sections of the country cooling is desired during the summer season. And in all parts of the country the comfort and healthfulness of a home are enhanced by good circulation of properly cleaned and humidified or dehumidified air. All of these things make up air conditioning, and the home buyer of 1955 has a deep and lively interest in it.

AIR CONDITIONING

The American people's interest in air conditioning has been growing steadily for a number of years now. They received their first real taste of it in motion picture theaters, and their liking for it caused other commercial interests, such as stores, hotels, and restaurants, to install air conditioning. In many instances air conditioning became a matter of economic life or death to businessmen.

Then the trend toward home air conditioning started. At first this took the form of partial home cooling with individual room air conditioners. Now technical progress is bringing central year-round air conditioning within the reach of more and more people—and that is what they want.

Central air conditioning is showing signs of following the same pattern as central heating—developing from a novelty into something that everyone takes for granted a new home will have. And that development is taking place for the same reason—people want all the comfort and convenience they can get.

Right now, central year-round air conditioning has

*President, American Radiator and Standard Sanitary Corporation.

moved out of the dream stage into reality. Each year the price bracket of homes that offer full air-conditioning goes down a notch or two. Each year new and better equipment is placed on the market, further stimulating the desire to own and to enjoy.

At the same time, central heating itself is taking forward strides. It is no older than most of us in this room. And it has changed just about as much as we have since the day we were born.

Heating is no longer work for the family. Heating no longer monopolizes the basement. Heating is no longer a hit-and-miss proposition.

Within our lifetime we have seen coal dwindle to a minor position as a domestic heating fuel, largely replaced by the so-called automatic fuels: gas and oil. There are indications that, within our remaining years, we may even see these fuels replaced by electricity or other forms of energy.

HEATING EQUIPMENT

We have seen heating equipment diminish in size as it has increased in efficiency and service. And we are right now seeing heating being joined by its brother-in-comfort: cooling. All of that spells comfort, convenience, and desire.

Even in this predominantly masculine audience I am not going to risk saying that I subscribe to the old adage that women's place is in the home. But, as a building-equipment manufacturer, I certainly do not underestimate the influence of women in the selection of equipment for the home. The prime example of this is the kitchen.

THE KITCHEN

It may well be that a woman's chief interest in a kitchen is spending as little time as possible in it. Nevertheless, she is fanatically determined that what time she does spend there will be passed in comfort, convenience, and beauty, with as little energy expended as possible.

As many of you are probably painfully aware, the kitchen in the modern home can easily become the most expensively equipped room in the house. Many builders will tell you that a woman's reaction to the kitchen of a new house often determines whether or not her family buys the place.

Kitchens and kitchen equipment help to sell homes just as much as new homes provide a market for kitchen products. To keep pace with this trend, the appliance and

kitchen-equipment manufacturers are constantly leapfrogging each other with new, better, and more colorful models.

I have singled out just three of the many types of equipment that go into a home. Multiply the desire generated by these three by all of the other parts of a house—glass, lighting, structural materials, finishing materials, and all the others.

It is not hard to see how all that desire crystallizes in demand for a new home, after it has been expertly designed and constructed. And it is the homes sold to satisfy desire that have been turning good building years into excellent building years.

All this desire is being translated into active demand, because more and more people are now able to afford the kind of home they want. In 1953, 54% of the nonfarm families in the United States had incomes of \$5,000 or more. This number has been steadily growing in recent years, resulting in a rising standard of living which is stimulating people to seek new homes.

It is also reflected in another trend. We do not always have to buy a new house to get a new bathroom or a new heating or air-conditioning system or a modern kitchen or up-to-date roofing or siding. There is a thing called modernization—making over, replacing, or adding to an existing home.

According to recent surveys, exactly half of the nonfarm homes in this country are over thirty years old. It is estimated that between \$10 and \$12 billion is being expended each year on the modernization of existing homes. And well it should be, when you consider that, for example, there are 8 million nonfarm homes in this country without bathrooms, and 16 million without central heating—and many more millions that do not have the modern equipment I have talked about.

As you can see, the modernization potential is huge—and growing steadily. Houses, like people, get older year by year—but they are more easily renovated and preserved.

It does not make a bit of difference to the profit-and-loss statement whether products are used in new houses or old ones. New building and modernization are both part of the construction industry. Both are giving the American people what they want.

So I suggest that, when we analyze the building industry, we keep in mind the human factor as well as the statistical data. What Americans want they usually get—and they want new and better homes to live in.

Dividend Notice

JEFFERSON LAKE SULPHUR COMPANY

The Board of Directors, at a meeting on May 16, 1955, declared the regular quarterly dividend of 40c per share on the Common shares (Dividend No. 48), payable June 10, 1955, to shareholders of record, May 27, 1955.

CHAS. J. FERRY
Vice-President &
Secretary



INTERNATIONAL HARVESTER COMPANY

The Directors of International Harvester Company have declared quarterly dividend No. 160 of fifty cents (50¢) per share on the common stock payable April 15, 1955, to stockholders of record at the close of business on March 15, 1955.

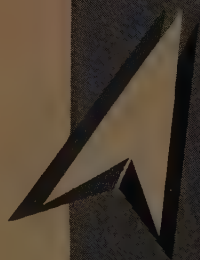
GERARD J. EGER, Secretary



STAUFFER CHEMICAL COMPANY DIVIDEND NOTICE

The Board of Directors has declared a dividend of 37½¢ per share on the common stock payable June 1, 1955 to stockholders of record at the close of business May 18, 1955

Christian deDampierre
Treasurer



Annual Report

FAIRCHILD ENGINE AND AIRPLANE CORPORATION

Statistics in Brief

FOR THE YEAR AS A WHOLE	1954	1953
Sales and Other Income.....	\$140,751,724	\$170,541,543
Costs and Expenses before Federal Taxes on Income	132,077,929	156,495,782
Earnings before Federal Taxes on Income.....	8,673,795	14,045,761
Federal Taxes on Income.....	4,539,780	10,032,220
Per Share	1.57	4.34
Net Earnings	4,134,015	4,013,541
Per Share	1.43	1.74
Dividends	2,136,941	1,848,166
Per Share80	.80

AT THE YEAR END

Unfilled Orders.....	\$246,000,000	\$321,000,000
Net Working Capital.....	19,658,994	15,923,992
Per Share	6.81	6.89
Stockholders Investment.....	31,530,601	23,315,564
Per Share (Book Value).....	10.92	10.09
Ratio of Current Assets to Current Liabilities	1.6 to 1	1.4 to 1
Number of Common Shares Outstanding.....	2,887,758	2,310,207
Number of Stockholders of Record.....	13,500	10,351
Number of Employees.....	13,671	13,005

FAIRCHILD ENGINE AND AIRPLANE CORPORATION

HAGERSTOWN, MARYLAND

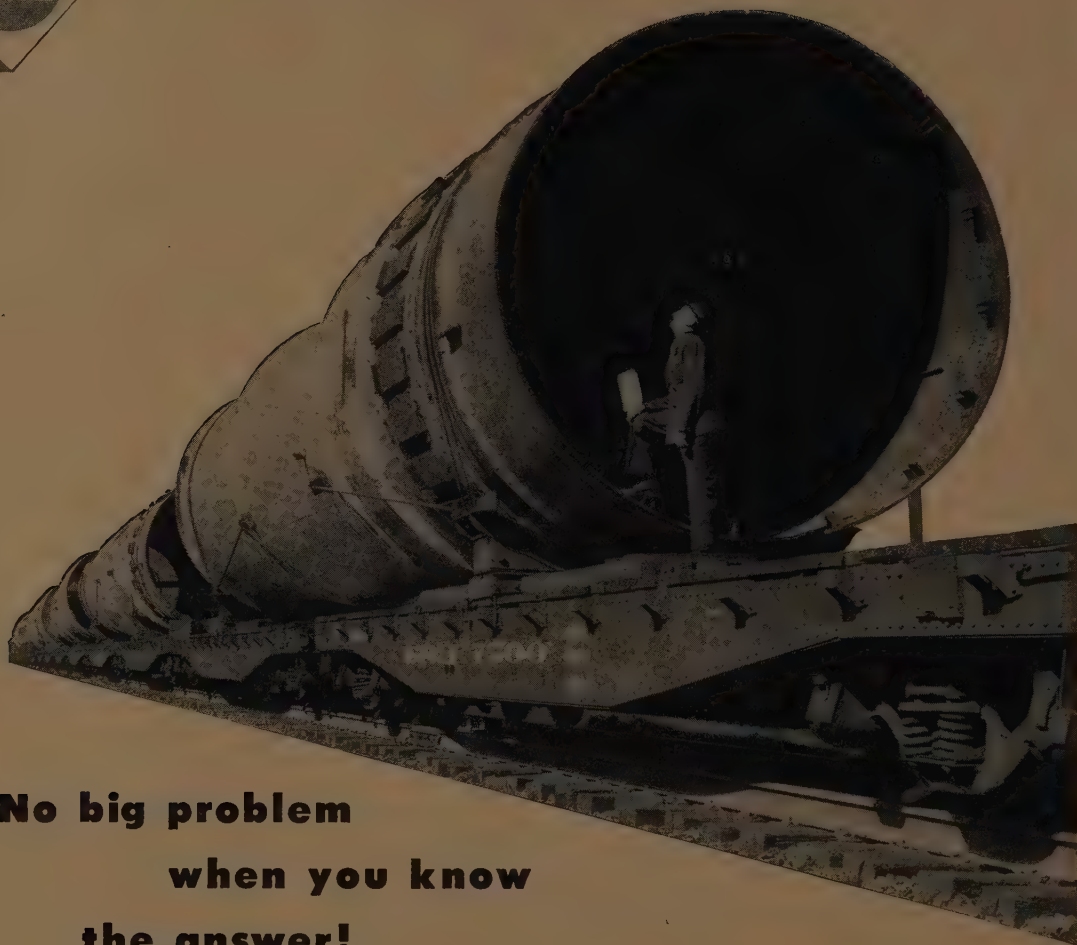
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Copies of our annual report are available on request...





...Mark of PROGRESS in Railroading



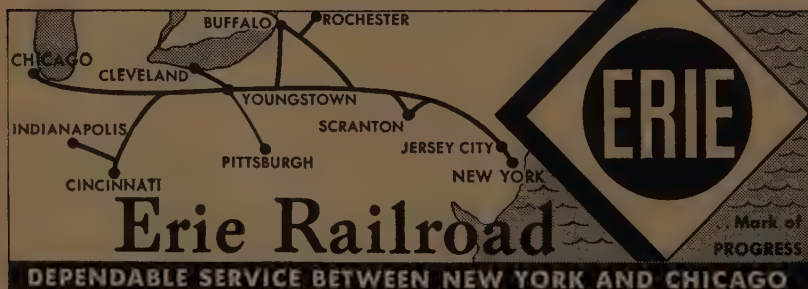
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TO PLAN the routing of this high and wide shipment would pose quite a problem. For not every railroad could undertake to handle this fractionating tower destined for a petroleum refinery.

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Outlook for Railroads

MODERATOR
PIERRE A. BRETEY
Hayden, Stone & Company

Dieselization Completed: What Economics Next?

JOHN E. KUSIK*

WITHIN THE RAILROAD INDUSTRY, there are a number of major new earning-power opportunities waiting to be harnessed. They may be likened to the drifting flood tides of a great river which, when properly dammed and channeled, can be converted into powerful forces of creation.

In the climate of a bright outlook of the report of the President's Cabinet Committee on Transportation, it is appropriate that we should consider today these powerful forces of promise within the railroad industry itself. This is also appropriate because the spectacular results achieved through dieselization naturally pose the question as to where the industry might turn next for successful relief from pressure of the needs of competitive rate making, rising cost of improved services, rising wages, and other factors.

VIGOROUS SALES ORGANIZATION

May I say, first of all, that, for development and growth of earning power, there is no substitute for a vigorous sales organization. It must be vigorous in recognizing the ever-changing needs for transportation service; it must be vigorous in anticipating these needs through extensive research and development; it must be vigorous in solicitation and in industrial and mine development, as well as aggressive in competitive rate making.

To attain these specifications, a railroad must have strong and progressive sales executives, who keep themselves abreast with the latest developments in the art of successful sales administration in outside industries, as well as in the railroad industry. They must find and apply the most modern sales administration and promotion techniques, which are responsible for so much of this Nation's progress. And a railroad that can boast of a selling organization with such characteristics will have a substantial part of the answer to the question: "What next after dieselization?"

On the operating side, by far the greatest opportunity

of new profits lies in increased utilization of transportation property. As someone said recently: "In America we have a tendency to overprovide for plant and equipment in our desire to conquer new worlds. However, we are now finding out that such undertakings are expensive and, perhaps, luxuries we cannot afford."

In any event, this is certainly the situation in the railroad industry. Its business is a business of movement and yet its rolling stock is standing still 89% of the time!

On most railroad main lines, one could stand for hours without seeing a train go by. Thus, we have underutilization of roadway as well as equipment.

OWNERSHIP COSTS CONTINUE

While this huge investment is standing idle, its ownership costs—that is, cost of money, maintenance, and depreciation—go on. These elements by far account for the largest proportion of the costs of running a railroad.

The other day while reading an article in *American Aviation*, I was struck by this sentence: "The ABC's of aircraft operations economics are that increased utilization results in reduced operating and maintenance costs." Now, as we all know, of course, this same principle applies to rail operations, because, as I have just emphasized, the largest proportion of our costs is fixed cost of ownership.

However, I am of the opinion that, in the railroad industry, the principle and consequences of increased utilization have not yet been accorded ABC status, although substantial progress has been made. As we view the many billions of dollars invested in underutilized railroad plant, there is, therefore, no other factor that looms so large in the industry's future efforts to reduce its costs. It is an opportunity that is much greater in potential importance than the total effect of dieselization.

But how, you will ask, would a railroad go about such increased utilization? Of course, again we must start with the right men in the right places. Beyond that, I will give you just two illustrations of the many things we in the railroad industry can do even before getting into such high-level, but essential, activities as mergers and consolidations,

*Vice-president, Chesapeake & Ohio Railway Company.

The first deals with increased utilization of roadway. It so happens that we, on C&O, have a number of locations where our main line parallels that of other railroads. Without identifying them for you specifically, let me say that, in one place, we are in a position of approaching another railroad and telling its management something like this: "As you know, we have spent several millions of dollars in strengthening our line between these two points, including the installation of CTC. Our line is now much better than yours. We would like you to come in with us and have you abandon your line. A deal could be made that might be worth a lot of money to each of us." If we bear in mind the high caliber of management of this other railroad, it is reasonable to expect that they will be very happy to work with us.

In another situation, the conditions are exactly reversed. We are in the position of saying that someone else's line is much better than ours and that we would like to abandon ours if a good deal could be made. Inasmuch as it costs about \$3,500 per year to maintain a mile of track, you can see that a series of deals involving the abandonment of, say, 1,000 miles would produce for someone a continuing saving of \$3.5 million a year.

OFFICER WITH SYSTEM-WIDE AUTHORITY

For a different illustration, I will refer you to the type of organization that C&O and some other railroads have to insure full utilization of Diesel engines. It calls for the placing of responsibility for utilization of motive power in the hands of an officer with system-wide authority.

When our plan is fully effective, this officer will know the position of every locomotive on the C&O system at all times. Often this responsibility is divided among a number of regional or district officers with conflicting interests, with the result that best utilization of expensive equipment cannot be obtained.

On C&O, increased utilization, through our very first steps along these lines, led to a reduction of anticipated purchases of Diesel engines by 20 to 30 units, worth close to \$5 million. Moreover, with our present total ownership of Diesel engines of more than 700 units, we believe that it is a reasonable minimum target to look for 10% more work out of it.

This would be equivalent to saving 70 Diesel engines worth more than \$10 million, with a further annual saving in ownership costs—depreciation, maintenance, and cost of money—of perhaps as much as \$2 million. Thus it is clear that many opportunities for increased utilization of transportation plant offer another major answer to the question: "What next after dieselization?"

COST-REDUCTION EFFORT

We will turn now to the discussion of a third latent new earning-power opportunity, and that is the organization of cost-reduction effort. As you know, intelligent men everywhere, as well as on C&O, have always sought better ways of doing things and lower costs of products, services, and operation.

However, it has not been, by any means, a universal practice for managements to maintain adequate control and supervision over such activities. And yet, for best re-

sults, managements have no alternative: They must ascertain and know at all times whether cost reduction results actually attained are in keeping with the needs of the business, and whether they are commensurate to available opportunities. On a railroad, these needs are, of course, outlined and defined by the pressures of competitive rate making, the rate with which wages and other costs are rising, and the size of the margins over the existing dividend rate that must be maintained to make investors feel secure.

LATEST TECHNOLOGICAL AND MANAGEMENT TECHNIQUES

The effect of these requirements is so powerful that managements must utilize the latest technological developments and modern managerial techniques if they are to be successful in maintaining a high enough flow of cost-reduction realizations. It is not sufficient to proceed with lack of positive knowledge on the basis of "We will do the best we can."

To return to our simile of flood tides, energy is being dissipated rather than created when waters are permitted to flow where they will, without being properly dammed and channeled. What is needed for successful cost-reduction effort is an engineering approach consisting of the following steps:

1. Measurement of the rate of the present undirected, uncontrolled flow of cost reductions.
2. Appraisal of the full potential of available opportunities.
3. Establishment of a controlled, accelerated flow of cost reductions through enlarged organization channels.

Perhaps this discussion has sounded thus far like a lot of theory and intellectual exercise of academic character. It is nothing of the kind.

Once we established that cost reductions are in existence on C&O which, when realized, would reduce our cost level by \$25 to \$30 million per year, we said to ourselves: "Let us organize to get them in two years instead of drifting along for five to ten years." The difference between realizing \$25 million in two years and in five years is \$7.5 million per year.

CANNOT AFFORD TO WAIT AND DRIFT

With this amount of money in sight in known opportunities, we simply cannot afford to wait and drift, especially when we are positive that tomorrow—that is, the completion of the present program—will bring its own new opportunities. And, with this amount of money in sight, we are fully justified in considering the use of the engineering approach to cost reductions, as another major future channel of strength to the railroad industry and another answer to the question: "What next after dieselization?"

So, we men of the industry should view the future with optimism and confidence. The railroad industry is no different from other industries in the sense that, as new major problems arise, new opportunities are available with which to combat them. The potentials that we have been discussing illustrate the powerful new sources of strength available to the railroad industry. Let us make sure that we are ready to harness them!

Three Ways to Increase Railroad Revenue

WILLIAM H. SCHMIDT JR.*

IT IS TIME for a change in emphasis. Since the end of World War II, most of the speakers addressing themselves to this body on railroading have devoted themselves to the subject of minimizing railroad expenses.

There is no question that, with postwar inflation, this was management's primary task. With the keen interest and backing of the analysts—railroads have performed miracles in "spending money to make money." In short, management has demonstrated its ability to make money from relative static, or declining, business.

These miracles will continue, and expense control will remain the fine science that it has become. The big job now is to increase the earnings of the railroads by increasing the utilization of their plant.

The peculiar nature of the railroad business, with its high overhead and close relationship between volume and unit cost, makes it necessary to increase the railroads' share of total traffic offered. An analyst I greatly admire has a habit of saying, "Don't wear out the railroad." He means, of course, that the railroads ought not to move traffic at a loss. He is absolutely right.

But the trouble is that people of less perception may be tempted to take his admonition to literally. Railroads were made to be worn out. The more you use them, the better they pay.

THREE WAYS TO INCREASE "TAKE"

As I see it, there are three ways by which railroad revenues—and net income—can be increased. They are:

1. Better service.
2. Establishment of rates that will attract all the traffic on which the railroads can make a profit and will move off the rails all business that they carry at a loss.
3. Equality of the railroads' competitive powers with those granted other forms of transportation.

BETTER SERVICE

It is important to emphasize the fact that shippers are not so much concerned with speed in transit as they are with reliability of delivery. The trouble with much railroad freight service is that it fluctuates widely.

Dieselization has had both virtues and defects. Its virtue has been to increase greatly over-the-road speed between terminals and, simultaneously, to increase the train load. On the other hand, the great power of the Diesel has introduced a universal temptation to hold tonnage to achieve this high train load. With the general decrease in railroad freight traffic, this has reduced the frequency of service on much main-line trackage, to the point where it is not good enough to compete with trucks, and has unduly increased the time that cars spend in yards.

It is clear, I believe, that the great improvement in rail-

road freight service must come in the terminals—origin, intermediate, and destination. How to achieve that improvement without running up costs unduly is the most complex problem that railroad management has ever had to face. In all the literature I have read and the discussions I have had with railroad officers, I received fewer clear and unequivocal answers to this problem than to any other.

Consolidation of yards is an obvious answer. So is "main tracking"—by which cars are preclassified for as distant terminals as possible and are main-tracked through the intermediate yards, with stops only for inspection and simple setouts and pickups.

There still remains, however, the thorny problem of what to do with the great number of small industrial yards in large cities and handling cars in terminals, where traffic is too small to justify humps and mechanization. President Symes has pointed out, on many occasions, that the costs that really break the back of the Pennsylvania are not the cost of classifying cars, but the cost of "jackassing" them from plants to classification yards through a maze of street tracks, spurs, and supporting yards.

Where traffic is moved in great volume from or to a single plant—such as a utility receiving 60 cars of coal a day—the unit cost of industrial switching is easily absorbed. But moving the occasional car to a downtown area, for example, may absorb almost the whole of the revenue received.

One of the best answers to this problem, as well as to the problem of serving the increasing number of off-track shippers, is "trailers-on-flats" service operated by and for the railroad, for freight in van-load quantities. There is good reason to believe that, for certain types of hauls, it would be good business for the railroad to take a lesser rate on a lesser unit quantity of freight and move it in trailers crosstown than to preserve the existing boxcar rate and move it wholly on rails.

IRONING OUT THE BUMPS

One of the prime enemies of reliable railroad service is violent fluctuations in short-term budgets. The railroad business seems to be cursed with what may be called "on again, off again Finnegan"-ism—which is prompted by a desire to show consistent earnings month after month. Mr. Kusik has written dramatically on this subject and has set forth some horrible examples of the absurd, freakish, and unprofitable lengths to which some roads go to get good-looking monthly figures. Achievement of an appearance of profitable operations, on the short cycle, frequently requires desperate measures—measures that sacrifice long-term plans for service improvements and cut supervisory staff to "the point of no return."

For example: Certain railroads have announced again and again, that they were "really going to improve lcl service." Each time, they set up a special staff, and put on

*Executive editor, *Railway Age*.

the kind of trains and freighthouse forces necessary to attract traffic. Then — just as large expenditures already made were about to pay off in increased patronage—down came the axe. All the money spent in promotion and staff buildup and training was wasted.

Shippers have long memories. When the defaulting railroad again becomes interested in lcl business, *they* don't.

Perhaps the reason why some railroads behave as they do is that they work on too close a margin. Poor folks have to live hand to mouth.

The greatest service the analyst can render in the interests of greater profits from the American railroads over the long run, in my opinion, is to find the means by which management can smooth out the fluctuations in its expenditures so that, like other industries, it can provide the customer with a more reasonably *consistent* service and carry out its plans to fruition.

I realize that, in asking for such an accomplishment, I am disturbing some ancient gods. You might be inclined to agree with the Negro preacher who preached a sermon on the creation of the world. He told how "the Lord, after creating this here earth and seein' it was good, wanted somebody to enjoy it. He reached down, scooped up a handful of mud, fashioned a figure to his liking, called it Adam, and set it up agin' the fence to dry. Then the Lord thought Adam ought to have some company. And he scooped up some more mud and molded it into another figure he called Eve."

Just at this point there came the high voice of a small boy from the rear of the church: "But, Parson, where did the fence come from?"

"Boy," growled the preacher, "it is questions like yours what is ruinin' religion!"

SERVICE ONLY ONE FACTOR

Important as service is, it is not "everything." Those who urge the railroads to recast their service completely and to ape the speed and flexibility of their competitors do, I think, a major disservice.

Railroading is a volume industry. Its tracks, its right of way, its large fixed staff are tremendously expensive. They can be justified only if business is moved in large units, and in great volume. If the railroads try to copy their competitors in every way, they will go broke fast, in the opinion of many railroad executives.

"Service" is simply one factor to be weighed on the scales by the buyer of transportation. Thus, he balances the cost of carrying a greater inventory against the cost of using a slower carrier. Often the slower carrier wins the argument.

It is significant that freight traffic on the inland waterways is growing at a greater rate than that on the highways. Inland water transportation is slow, but it is reasonably consistent. Given transportation that is cheap enough, shippers are inclined to discount the value of fast transit time.

REALISTIC RATES

In my opinion, therefore, freight charges are far more important than service. By "charges" I mean not only

what is published in the tariff, but rather the whole cost of shipping by any particular form of carrier.

Thus the charge for shipping by rail is not the tariff rate—but the tariff rate *plus* the cost of packing, the cost of loading, the cost of access tracks, and the unreimbursed business costs of loss and damage. The shipper's cost of routing by truck is the tariff rate *plus* the extra cost of tail-board congestion at his plant, and the likely necessity for peaks and valleys in his unloading operations because vehicles cannot be held.

The present railroad rate structure, as analysts well know, is a kind of noble hodge-podge. The late Joe Eastman called it "a mass of relativity floating in the void." Its components range widely.

Some rates exist only because ancient tradition demands that sacred relations be observed between commodities, between producers, or between regions. Certain competitive rates, in contrast, represent the very smartest kind of merchandising.

In general, however, it may be said that railroad rates are based on a monopoly theory of pricing, by which charges were made according to the ability of any particular commodity to pay, and not on the cost of moving that commodity *in any particular volume*. For the most part, railroad rates still tend to make the short-haul shipper subsidize the long; the shipper of high-value commodities, the low.

This kind of rate structure worked exceedingly well for the entire business community—as long as the railroads enjoyed a virtual monopoly of land transportation. It enabled producers at far-distant points to compete at par with producers near markets; it spread markets; it equalized opportunity.

But this kind of rate making became hopelessly vulnerable when there came into being carriers who were not within its orbit. Truckers, for example, "crawled under the rate umbrella" thus created, and picked off the freight that was accorded rates higher than the cost of moving it. Their exorbitant profits from this high-rated stuff enabled them to compete for the lower-value commodities on return hauls.

Unless this peculiar character of traditional railroading pricing is understood, it is easy to fall into the delusion that railroads are losing traffic to competitors because transportation by rail is inherently costly or obsolete. The facts are quite the opposite:

In 1954 the railroads were able to support themselves (not in high style, I admit) on freight revenues that averaged 1.3 cents a ton-mile. In contrast, regulated common carrier truckers obtained 5.1 cents.

This can only mean that the truckers chose the business they wanted—and left the rest to the railroads. The traffic they chose is that which was rated high in the railroads' tariffs. They could undercut the rail rate and still make a good profit.

Many of the "umbrella" rates, which the railroads are forced, by tradition, to keep in their tariffs, are actually paper rates; they move no traffic. They give a false sense of value.

They remind me of the local merchant who had been

robbed the night before. One of his customers commiserated with him, asked if he lost much. "I lost quite a bit," replied the storekeeper, "but it would have been a lot worse if the burglars had gotten in the night before. You see, yesterday I just finished marking everything down 20%."

COMMON VERSUS SPECIAL CARRIAGE

To fit the railroads to fight for an increasing share of the traffic, there will have to be a complete change in the concept of what the common carrier is, and what it can be made to do, in the light of universal competition in transportation. The problem was well put by the present head of the French railways when he said: "The common carriers have lost the *right* to carry, but retain the *obligation*."

Like the electric utilities, the railroads are regulated. But, unlike the utilities, they receive no protection whatever from competition for traffic worth having. Thus, they lie between two worlds and get the worst of both. They have neither the protection of the utilities nor the freedom of ordinary enterprises.

Seeing that the railroad rate structure consists of higher-than-cost rates for some commodities and lower-than-cost for others, shippers everywhere encourage growth of other carriers, or build up private truck or barge fleets to move the commodities on which they would have to pay high rates. They also take away from the railroads traffic which, though lower-rated, moves in consistent, profitable volume and which is channelized. They leave to the common carrier the rest.

More and more, our railroads are having forced on them the unprofitable role of the standby facility—to be used only when one's chosen transport agency is overloaded, or the traffic is unbalanced, or one has the occasional shipment to the remote spot. To the railroads also is thrown the awkward, bulk-without-weight freight called "balloon merchandise." Finally, the railroads retain the freight which, for one reason or another, they move at rates at a level that are lower than anybody else wishes to match.

Here is a good illustration. One railroad management recently went into a detailed study of passenger-train operations. It found that one train daily carried a refrigerator car, suitably iced, for a few hundred pounds of cheese from a single creamery.

The record showed that, years ago, this creamery had moved many cars of milk and cream daily, and, as a matter of accommodation the railroad provided space for small cheese shipments at low rates. The milk and cream had long since gone, in profitable volume, to movement in the dairy's own trucks.

But the little mess of cheese continued to ride grandly in the corner of a railroad express-type reefer. As one officer of the railroad put it, with understandable cynicism, "I suppose, if the cheese business had built up in volume sufficient to make a truck load, we would have lost it too." The moral of this is that traditional railroad rate making and service encourage this kind of abuse of the common carrier.

Modern pricing ought to provide strong incentives to increase patronage. The regulated utilities, for example, encourage industry to use more and more electricity by

quoting lower and lower rates—not for all current consumed, but for *additional* quantities consumed. They discourage use at peak periods and encourage it in slack periods.

Thus, the consumption of electricity has grown at a rate faster than population or industrial output. At the same time, the utilities have made it increasingly unprofitable for industry to manufacture its own electric power. Railroads and transit systems, for example, twenty or thirty years ago, generated their own power; today, invariably they buy it from utilities.

The trend is just the opposite in transportation. The drift is toward more private and contract carriage, on the one hand, and toward decentralization — and hence less transportation — on the other.

The reason for this trend, I believe, is that the common carriers have not been permitted to price their services on a basis that provides incentives for greater and exclusive use of their facilities. Such incentives would work both ways. Increased traffic, if obtained in regular, consistent volume, actually reduces the railroads' unit costs and enables them to offer still lower rates to encourage still further increases in traffic.

WHAT DOES IT COST?

An indispensable tool in realistic rate making is accurate cost finding. Under monopoly pricing, attainment of sufficient revenues to support the railroads was the sole consideration.

Railroad men had enough experience to know what rate each kind of traffic would bear. For the rest, finding of rough *average* costs was sufficient to let a railroad know how low it could afford to go in making a rate to move "sticky" traffic.

Usually the traffic manager divided his freight revenues into his car-miles, and used the resultant "car-miles earnings" as his yardstick. In today's competitive markets—in a business where specific costs are so greatly affected by specific volume of movement—rough-hewn "statistics" of this sort are somewhat like the bikini bathing suit; what they reveal is interesting, but what they *conceal* is vital.

Now that the Government-owned British railways have almost limitless freedom to set their freight rates so as to put the most traffic on rails (by special, secret deals with individual shippers, if they desire), they find their chief need to lie in the field of cost finding. They say: "How can we bargain with an individual shipper or association, if we do not know what we can afford to charge?"

Although railroading is a complex, joint-cost type of business, in an era of rate competition it is necessary to find the cost of particular movements of particular commodities. Present-day classification of commodities provides roughly for differences in "loadability" (or density), proneness to damage, and so on.

Commodity rates and so-called exceptional ratings are quoted where substantial movement exists. Class rates differentiate between carload lots and less-than-carload shipments. But far closer relationships of rate to specific costs are necessary if the railroads are to compete profitably for traffic.

Railroad costs are closely affected by *regularity* of shipments—of which present-day rate making takes insufficient account. They are acutely conditioned by the size of shipments offered at any one time and capable of being handled as unit from origin to destination. Yet few train-load rates have been initiated by the railroads, and fewer still allowed by the Interstate Commerce Commission.

LUKEWARM ON COSTING

It is no secret that railroad men look on cost finding with mixed emotions. They realize, I believe, that averages are no longer adequate. But they also fear that, because everything the railroads do is pitilessly exposed on the public record, the definite cost figures would immediately be seized on by shippers and local politicians as excuses for reductions of rates "across the board."

The cure for misuse of cost figures by the public, of course, is to relieve the regulatory bodies of their obligation to prescribe broad rate patterns and, consequently, take away the need for publicity about railroad costs. These would then become what they are in any other business — the private knowledge with which railroads approach the bargaining table. The public would learn all it needs to know about railroad costs by looking at published charges.

PARABLE OF THE CENTIPEDE

To say that the railroads generally must increase the range and refinement of their cost studies is far easier than to stake out the means for doing so. It is like the parable of the centipede who, afflicted with the gout, repaired to a wise old owl and complained that all 100 of his legs hurt like sin. The owl thought a while; then put on a smug look and advised the centipede to become a mouse. He reasoned that, with only four legs, the centipede would have only 1/25th the pain it formerly suffered.

The centipede thought well of the idea, and thanked the owl, but wanted to know how he could get to be a mouse. "Don't bother me with that," snapped the owl. "I only create *policy* around here."

Hope for success in the field lies in the fact that a few roads have already advanced their costing work to an advanced degree. There is reason to believe that, in at least one territory, the railroads will join in a collective research project. There is much to be learned from the British and from the French railways, which have already made great strides in tackling this difficult and complex problem.

In France, cost work and a complete revolution in rate-making principles based on it are credited with arresting and reversing the trend in freight traffic, toward increased patronage of the railroads—both absolute and relative to other carriers.

EQUALITY OF COMPETITIVE OPPORTUNITY

The third way of achieving increased railroad revenues lies in the equalization of their competitive powers with those of their rivals. The greatest evil of subsidy is not in its burden on the taxpayer, but in its effect on the costs and prices of competing carriers.

As far as the railroads ability to compete for traffic is

concerned, the subsidy problem can be solved in two ways. Subsidy can be ended, or it can be extended to include the railroads. What is needed is equalization.

As payers of high income taxes and, I hope, high capital *gains* taxes, and as proponents of private enterprise and a minimum Government, analysts undoubtedly would champion the end of subsidy. So does every railroader.

But it is becoming clearer every day that there is faint hope of ending subsidy in the transportation field. The railroads have fought for at least thirty years—with great skill and with considerable money—to educate the public to seek an end to, or at least a diminution in, subsidies. The program has gained some sympathy, but no action.

Subsidy is increasing in dollar amount and, more important, in its influence on the cost structure of competing forms of transportation. I doubt if the railroads can wait much longer—particularly since they haul less and less of the total traffic each year.

However unjust, the public gives greater weight to its familiarity with the carrier than it does to its "rights." The more important the subsidized carriers become, the more potent becomes their argument that they must continue to be supported because the public needs them.

You see this line taken in truck and barge-line advertising constantly. In fact, the railroads used to use the same kind of argument, though for a diametrically opposite purpose. The argument makes little sense when one is talking about justice, but it is hard to beat down, nevertheless.

It is in the passenger field that subsidy is dealing the railroads the rudest blows. Take the air lines, for example. In their public pronouncements they consider as subsidies only air-mail subsidies. But air-mail subsidies are chicken feed compared with the provision of terminal facilities at less than cost. There is not a self-supporting airport in the United States.

Bus lines using the Port Authority Terminal in New York pay a ridiculously low rental fee for a first-class, strategically located terminal. This facility pays no ad valorem taxes of any kind.

In contrast, Grand Central, now aging, pays the City of New York \$1,331,250 a year for the mere privilege of being in existence. When it is considered that the terminal costs of passenger trains frequently absorb half of the whole revenue received, it is clear that the impact of subsidy is very great. It is unrealistic to say that railroad passenger service is hopelessly high cost and unsalable at a profit, until some effort is made to see that it is placed on a parallel with other forms of transportation with regard to public aid and taxes.

In the suburban service field, particularly, there lie great opportunities for exemption from ad valorem taxes and the employment of public aids—without threatening the private ownership of the railroads. For years I have heard railroad men say that public aids would bring with them Government ownership of the railroads. I can observe only that the air lines have depended on Government largesse in increasing amounts; yet their managements are as vigorous "enterprisers" as can be found anywhere; and they are a good deal farther from the threat of Government ownership than are the self-reliant railroads.

I live in Bergen County, New Jersey—largely a dormitory for New York City. The majority of commuters to New York travel by bus and by car pool—uncomfortably and expensively.

For their accommodation, both states have sunk billions into arterial highways, which are becoming more choked every day. Just to provide rights of way and terminals for this highway movement absorbs vast tracts of tax-free real estate.

Practically every commuter now using highway transportation to New York would prefer rail. But the railroad plant has not changed in location since the beginning of the century and is badly related to the sources of traffic.

Obviously the railroads cannot make new capital improvements for this service when they suffer heavy losses on a depreciated plant. They have every right to "want out."

It makes a serious economic problem. Here is public demand. Here is preference for railroad travel. Here is a job the railroad can do better than anybody else—and cheaper.

Yet the whole business lies on dead center because there is no economic incentive for anybody in the Government or business to embrace the obvious solution—which is to spend money on increased railroad facilities and stop spending them on highway facilities. There are strong political motives for spending money on highways. Yet none exist for building up railways. Who can provide the missing link?

The subject of subsidy in general, however, ought not to be so major a preoccupation of railroad management that it loses sight of an important fact—namely, that, in the movement of freight, at least, the railroads already have a big cost advantage over their subsidized competitors. They need not wait for Utopian justice to exploit a weapon already at hand.

Analysts are interested in railroad earnings. What possible effect can the things I have been discussing have on railroad earnings? My answer is this:

LOWEST-COST CARRIER

1. The railroads are the lowest-cost carrier—except for ocean and Great Lakes water transportation. This is true

in the face of subsidies which reduce artificially the costs of their competitors.

2. Increasing volume on the railroads tends to decrease their unit costs. This is not true of their highway and air rivals, which are "constant-cost" types of business.

3. For many customers today, the railroads are solely "standby" facilities. This means they are handling commodities under the least favorable conditions. Given the right to compete for the shippers' consistent bulk offerings, there is no question that railroad revenues would go up and their costs, down—even without an increase in tonnage over-all.

There is a great reservoir of traffic open to the railways. This traffic is, for the most part, more profitable and cheaper to handle than the traffic they now move. What that reservoir is, is anybody's guess. There is probably \$3 billion a year to be gained back from the semiregulated motor trucks alone. That which can be gained back from private carriers is incalculable.

REALISTIC RATE MAKING

Furthermore, realistic rate making—which takes account of volume and consistency—may stop and reverse the present trend toward a reduction in the amount of total freight traffic offered. If railroads are allowed to make private contracts with large shippers, they may be able to introduce rates that will make further decentralization uneconomic. Again, where there is now a tendency for electric-utility companies to move their generating stations as near to sources of coal as possible, realistic railroad rate making may make it more economic for them to erect their generating stations nearer the consuming centers and move the energy on rails instead of on wires.

INCREASE IN PROFITABLE TRAFFIC

Granted a continuation of the miracle of cost control already achieved by railroad management, modern regulation, modern pricing, and modern services should bring to the railroads a large increase in profitable traffic, which, in turn, should generate greatly increased net earnings—the red meat on which both the analysts and the investor feed.

The American Metal Company, Limited

COMMON STOCK
Dividend No. 118

The Board of Directors has declared a dividend of fifty cents (50¢) per share on the Common Stock payable June 1, 1955 to stockholders of record at the close of business on May 20, 1955.

H. VOGELSTEIN,
Vice President and Treasurer



Quarterly dividend No. 137 of Seventy-five Cents (\$.75) per share has been declared on the Common Stock of Allied Chemical & Dye Corporation, payable June 10, 1955 to stockholders of record at the close of business May 13, 1955.

W. C. KING, Secretary
April 26, 1955.

AIR REDUCTION

Company Incorporated



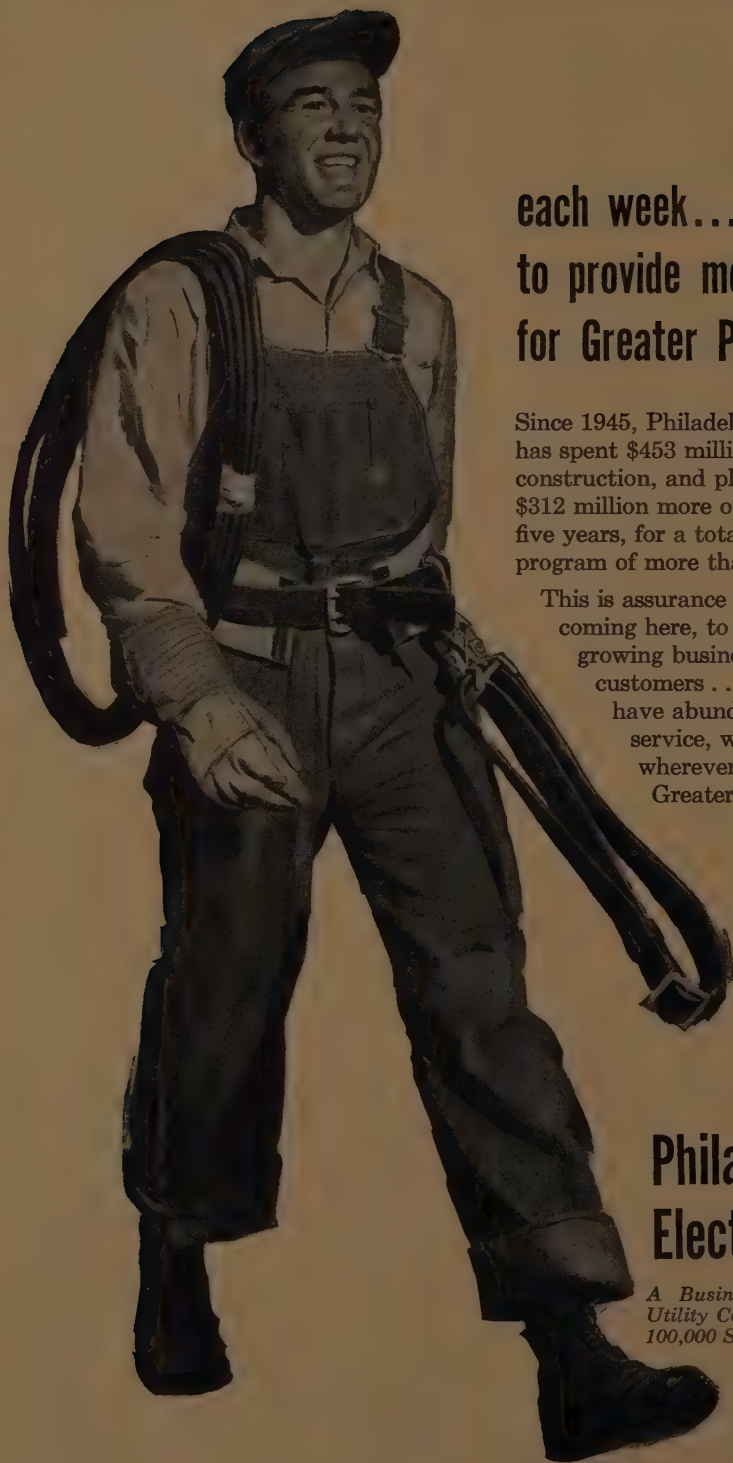
152nd CONSECUTIVE

COMMON STOCK DIVIDEND

The Board of Directors has declared a regular quarterly dividend of 35¢ per share on the Common Stock of the Company, payable on June 4, 1955 to holders of record on May 18, 1955, and the fourteenth regular quarterly dividend of \$1.125 per share on the 4.50% Cumulative Preferred Stock, 1951 Series, of the Company, payable on June 4, 1955 to holders of record on May 18, 1955.

April 28, 1955.

T. S. O'BRIEN, Secretary



**each week...\$1,000,000
to provide more power
for Greater Philadelphia**

Since 1945, Philadelphia Electric has spent \$453 million for new construction, and plans to spend \$312 million more over the next five years, for a total postwar program of more than \$¾ billion.

This is assurance to new industries coming here, to established growing businesses . . . to all our customers . . . that they will have abundant electric service, whenever and wherever needed in Greater Philadelphia.



**Philadelphia
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*A Business-Managed, Tax-Paying
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100,000 Stockholders*

CHAIRMAN
LONGLEY G. WALKER
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MODERATOR
CHARLES TATHAM JR.
Institutional Utility Service

Outlook for Public Utilities . . .

The Telephone Business in Competitive Prosperity

DONALD C. POWER *

IN HIS PRESS CONFERENCE on April 14, Secretary of Commerce Sinclair Weeks predicted that 1955 will be the peak year in the economic history of the United States. Prosperity records, the Secretary believes, will be set in all fields.

Nearly 7 million families will get new cars this year. As many as 1½ million will move into new homes. About 7 million will get new television sets. Pay checks for hourly employees that now average \$75.30 a week will get larger.

LIVING STANDARDS WILL RISE

Living standards as a result will continue to rise. Food is going to be superabundant and somewhat cheaper. Clothing will be plentiful and reasonable. People generally will be better off than ever before. It will, indeed, be a year of what I like to call competitive prosperity.

FORECASTS ARE EXCITING

These forecasts are all very exciting, but today I would like to look at how the telephone industry plans to face this era of competitive prosperity and what it is doing about the future. It seems to me that you people who are interested in analyzing securities and industry situations place a good deal of emphasis on past performance, but you place even more significance on prospects for future development and growth. That is the course I would like to follow in examining the telephone business in this year 1955.

When Mr. Alexander Graham Bell first spoke to Mr. Watson, only seven years had passed since the golden spike was driven in Utah which completed the first trans-continental railroad. Nearly half the people in America lived on the Atlantic Seaboard, and four fifths of the population was located east of the Mississippi. Automobiles were still twenty years off, and the airplane was a weird dream.

Communication was by personal visit, although the mail

and telegraph could carry messages to distant places. Three fourths of the people lived on farms and in villages, and Mr. Edison had not yet developed his incandescent light.

The fireplace served for both heating and cooking, fruits and vegetables came only in seasons, and most clothing as well as food was the product of each man's individual labor. Stores and specialized establishments were rare; manufacturing was performed on a small scale and mostly in local shops.

TELEPHONE CHANGED THE PICTURE

This was the America in which people lived and worked; self-contained communities, where survival was dependent on each man's or woman's own efforts. There was little occasion to travel very far or to communicate except rarely. There were long hours of work and little time for social activity. Mr. Bell's invention helped to change this picture considerably.

The transition from 1875 up to World War II is a remarkable one. Our economy, which had been predominantly agricultural, became more industrialized. Whereas only 25% of the people formerly lived in urban or suburban communities, the proportion grew to over 60%.

During the same period there was also a great migration of the population toward the West, the Northwest, and the Southwest. Our methods of production changed, and great shops evolved devoted to a single industry, particularly in the automotive field. Businesses became more far-flung with the growth of transportation facilities.

MOST SIGNIFICANT CHANGE

The most significant change that took place was the far greater dependence that individuals and businesses had on others. As opportunities broadened, so did our social contacts, but all these changes made us rely increasingly on the assistance and product of others.

Large manufacturing plants needed the products of others to complete their operations. People no longer lived in self-contained groups but relied on the specialized efforts of others to supply their basic living requirements.

*President, General Telephone Corporation.

The telephone industry, of course, contributed a very significant part to these business and social changes. Telephones became fairly commonplace in homes, and the widespread operations of business depended heavily on them.

MADE GIANT STRIDES

As the Nation grew and expanded, the telephone industry made giant strides. A few statistics will bring the fact home to you quite clearly.

By the end of 1880, there were 47,900 telephones in the United States; by 1900, this figure had climbed to 1,356,000; by 1920, we had reached 13,329,000; and, by 1940, when the stagnation of World War II stopped much of our development, a total of 21,928,000 telephones were in service. Automatic dial equipment had been made available in many communities, and, each year, as service expanded, the telephone became a better bargain.

Before telling you about some of the exciting possibilities that are ahead for the telephone industry, let me give you a few more statistics on telephone growth which sometimes seem fantastic. Even we who are in the business can hardly believe them when we read them ourselves.

ONLY SCRATCHED THE SURFACE

But it is in reviewing these statistics that we know that we have only started to scratch the surface of this business, contrary to what some people may think—but more about that later. Here are the eye-popping gains which have been made since we got started after World War II—let us say, from the beginning of 1946.

The telephone industry showed about 27,867,000 telephones in service at the close of 1945, and, for the first full year following the war, this total rose to 31,611,000. By 1950, we had over 43 million telephones in the United States, a gain of more than 11 million telephones in five years, and today that figure is about 52 million, or a gain of about 9 million more telephones.

Being familiar with utility operations, you will realize that this phenomenal growth required enormous amounts of money over the last few years and almost continuous financing. It seems to me that, at least once a year, and sometimes twice, the major telephone companies were going to market to raise additional capital. This fact, I know, has not escaped you.

But the important point about these financing programs has been the ability of the telephone companies to maintain a sound equity ratio in their capitalization pictures, and to increase their earnings substantially, thus preventing dilution of existing shareholders, a very necessary development if we were to maintain shareholder confidence. This has been a particularly difficult accomplishment, in view of the inflationary period that spiraled so rapidly following the close of World War II, and the effects of that inflation on a regulated industry. Required as we are to provide telephone service when our customers demand it, and not when we may be able to carry out such projects at the most favorable market price, much of our new telephone plant was installed at record high costs.

Our earnings dropped sharply, making it necessary to resort to debt financing, and endangering our previously

sound capitalization ratios. In the midst of business prosperity, the telephone industry's earnings were at a dangerously low point.

Our problem then became rates, and this was a big one, to say the least. Public Service Commissions had not had the experience nor the staffs to handle adequately the deluge of rate applications that hit them.

Telephone rates, for the most part, had remained nearly unchanged since some time in the 1930's. Management too was faced with the newness of the situation, and very few experts or specialists were available in the telephone industry who had had any previous experience in processing rate revisions with utility commissions.

The so-called "regulatory lag," the time between filing for higher rates and the time that an order was issued by the Commission, also had very serious effects on our earnings. The philosophy of many commissions had to be changed, and management had to develop better methods of presenting its case in a manner that would avoid delay and would give the commissions the necessary information for advance study, and thus eliminate the harmful effects of "regulatory lag."

IMPROVED EARNINGS

Evidence of our progress lies in the improved earnings of telephone companies. Adequate rates are the lifeblood of the telephone industry, as you well realize. Although a few commissions do not yet look on regulation as a means of giving specialized industries the advantages of competitive enterprises, while at the same time preventing the abuses of monopoly, it is my firm opinion that the regulatory climate, so far as the telephone industry is concerned, has shown real signs of improvement.

Another important development in our present situation, which I would like to say a word about, is sales. Since the end of World War II, all telephone companies have been devoting every effort to catching up with demand. There was a time when people in the telephone industry spent most of their time keeping out of sight of their friends and neighbors, for everybody wanted telephone service at once, and no amount of explanation could convince them that the telephone companies were being anything but arbitrary by refusing to install their telephones immediately.

That situation is pretty much behind us now. Unfilled applications for service are down to almost nothing.

HARD SELLING

The idea now is to expand the use of telephone service and facilities by selling hard. Our big problem here, as in our rate situation, is that we do not have many people who have had experience in selling. Those who have done some selling previously have been away from it for so long that they had forgotten how to sell.

We have changed all that, and the results have been astounding. We have always believed that the potential of the telephone business has just been scratched, and, as our sales programs begin to take hold, our predictions are being confirmed.

The demand for new colored telephones has far outrun production, and yearly budget estimates for an increase in

telephones have already been exceeded in many instances. At one time we thought that everyone had to have a black telephone. But, like the automobile business, we furnish what the customer wants. Today we are supplying telephones in eight different colors, and our customers like them so well that we are beginning to wonder what we are going to do with all our black telephones.

We have set up merchandising and sales staffs within our organizations to push sales and train others to sell, and our internal publicity carries the message constantly that all of us can and must be salesmen. The goals that we can achieve are constantly being revised, as we are exceeding the programs we previously thought were optimistic.

Extension telephones, special directory listings, increased use of long distance, adjustments for hard-of-hearing people, dial lights, outdoor gongs, all these services are useful and salable—but equally important they produce additional revenue. Many subscribers know very little about these services, and many more would buy them if a telephone representative would contact them. Our job is to get out and to sell to our customers, and this we propose to continue doing even at an accelerated pace.

WHAT IS AHEAD?

What is ahead then for the telephone industry? Where do we go from here? First of all, with the demand for service continuing so strong, I can see very little letup in our expansion and construction programs.

Conversion of most telephone service to automatic dialing, the large expense involved in the development of national toll dialing by our customers, and continued high efficient maintenance of our present facilities will all require large amounts of money. This will mean that additional enormous amounts of capital will have to be raised in the years ahead. This need for capital will probably not be on such a continually increasing scale in the next five years as it has been since World War II, but, if demand continues as strong as it is at present, I can see very little slackening off in our requirements for new money.

Earnings, we believe, are not yet adequate in some telephone companies, and increased efforts will be made to bring these into line. As new and increased costs become reflected in our telephone operations, it will probably be necessary to ask for further revisions in rates, even those that are currently considered adequate.

All telephone companies are watching this situation very closely, so that the regulatory commissions may be notified promptly of a drop in earnings. This procedure makes it unnecessary to ask for large amounts at any one time, which on past occasions has aroused public opposition, and it also prevents earnings from dropping excessively before rate relief is requested.

THE TECHNICAL FIELD

But, in looking toward the future, it is in the technical field and in the future possibilities of advanced telephone service that the greatest interest is aroused. Our engineers have done and are doing truly phenomenal things, and, although some of us may not understand how all these advanced electronic wonders function, we do know that many of them have been applied practically, and many more are

being thoroughly tested before they are offered to the public. No great industry ever stands still, and the telephone business is no exception.

One illustration is the trend toward small components of communication equipment. Such development will hold down costs and require less space.

The transistor is typical of this trend. The transistor makes use of the metal, germanium, and consists of a tiny piece of the metal, which has been purified to an extremely high degree and then subjected to the introduction of carefully controlled impurities of different amounts and types, all enclosed in a plastic bead.

This remarkable midger, connected with suitable circuits and modest sources of power, will amplify, modulate, or generate with extraordinary efficiency and economy the electric currents required for communication. It seems destined to revolutionize a good deal of the construction and design of electronic devices.

CARRIER SYSTEMS

Another important communication development is the extension of so-called "carrier" systems. For some time the industry has been making use of "carriers," which will provide for the transmission of 1,800 telephone conversations over one pair of conductors in one direction by use of different frequencies.

Even better ones are on the way. When applied to the coaxial cable, this carrier system gives the coaxial cable, having eight coaxial units, a capacity of 5,400 telephone circuits—even after allowing for one pair of coaxial units as a reserve.

A great deal of publicity has been given to the new cable, which will be laid at the bottom of the sea connecting the United States with Europe. This cable is equipped at frequent intervals with telephone repeaters and will survive the rugged service conditions of submarine cable, without requiring any maintenance for decades. Telephone conversations between North America and Europe will be greatly improved and will not be interrupted, as occasionally happens now, by atmospheric conditions.

MOBILE TELEPHONE SERVICE

Expansion of mobile telephone service is another of our growth areas. It is not impossible to conceive of mobile telephone equipment being a standard part of every automobile. People would no longer be stranded beside the road with trouble, salesmen would make advance appointments before going to the next town, and a call home from a late-arriving father would ease anxiety among the family.

Today mobile service has been installed in 300,000 various kinds of business vehicles. Another 15,000 are in private automobiles. Mobile service has been installed on passenger trains, on pleasure boats, and harbor crafts. Development of mobile service has hardly started, and, although there are still some technical problems to be overcome in order to make this service profitable to the telephone companies as well as useful to the subscriber, we know that we will get mobile service on a practical basis in time.

During World War II the various military groups made extensive use of the so-called "walkie-talkie" units. From

America's Sixth Largest Industry—Gas

WILLIAM B. TIPPY*

FROM A BUSINESS WITH A NET PLANT ACCOUNT OF \$3.9 billion in 1946, the gas industry had grown, by the end of 1953, to a net plant of over \$9.3 billion. Preliminary figures for 1954 indicate a net plant account of about \$10.2 billion at the year end. The present number of customers served is approximately 28 million, compared with about 20½ million in 1946. Over the same period, revenues from gas utility sales have grown from \$1.2 billion until they now exceed \$3 billion, according to AGA reported figures for the year 1954.

NATURAL GAS

When we talk about the gas business today, we talk principally about natural gas. Over 94½% of the therms of gas sold in the United States last year were of natural gas. Another 4½% were of mixed natural and manufactured, and the manufactured gas percentage is now down

*President, Commonwealth Services.

(Concluded from preceding page)

this practical application might well develop the cordless telephone, which would make the telephone operative from anywhere in your home without wiring each location. Sounds weird? Not at all. As far back as 1940, experiments were being made with this type of equipment.

In service in many offices today is a telephone instrument that enables you to talk and listen without lifting the instrument off the cradle. A small microphone and a tiny speaker transmit and receive conversations allowing freedom for both hands. If you want the conversation to be more private because guests are present, the telephone may be lifted to the ear and used in the conventional manner.

One important factor that will keep the telephone industry growing, and one that I have talked about many times before, is the astounding increase in the population of the United States. Almost constantly the census bureau has underestimated the rate of increase, and, each time the results are tabulated from actual count, we find that the United States has far more people than we imagined. New families are being formed at a rapid rate, construction of new homes, as I pointed out earlier, is exceeding all records, and, in each of these homes and families, we intend to sell at least one telephone, and, if possible, two or three.

As the population grows, it is spreading out. We can not all live in New York, Los Angeles, or Chicago. So there is a constant migration away from the large cities toward the suburbs and less congested areas. Business also is following this trend, and decentralization is one of the key activities in our development today.

To the telephone industry, decentralization is a happy circumstance, for communication is a key factor among widely spread-out operations. We have all heard about

to below 1% of the national total. Although the trend had been toward natural gas for a long time, the rapid rise in coal and oil prices after decontrol in 1946 gave the impetus that put real life and growth into the business.

In terms of total gas utility sales, this growth since 1946 has been tremendous, rising from about 26.3 billion therms in 1946 by 131% to the new figure for 1954 of 60.9 billion therms. Gas now accounts for one quarter of the Nation's annual energy supply.

Gas has come a long way from the days of the last century when its principal use was to provide a source of lighting. Toward the end of the century came the application of gas for cooking, followed by its use for water heating, later for refrigeration, and most recently for clothes drying and incineration in the home.

But, since the early 1930's, gas had developed a new basic load—domestic house heating—which has changed the characteristics of the industry to one principally of

this present movement of business and industry, but few of us, I believe, have recognized its scope or its implications. The telephone industry, believe me, is very much aware of it, and it is a strong force behind our continuing expansion program.

These are just some of the things that presently are exciting the imagination of all of us in the telephone industry. This is our present status in the competitive prosperity of 1955.

What is the ultimate of all this planning, this activity, this development? I would like to quote from a statement made once by Harold S. Osborne, who, until his recent retirement, was chief engineer for American Telephone & Telegraph Company.

Here is Mr. Osborne's forecast: "Let us say that, in the ultimate, whenever a baby is born anywhere in the world, he is given at birth a number which will be his telephone number for life. As soon as he can talk, he is given a watchlike device with ten little buttons on one side and a screen on the other. Thus equipped, at any time when he wishes to talk with anyone in the world, he will pull out the device and punch on the keys the number of his friend; then, turning the device over, he will hear the voice of his friend, and see his face on the screen, in color and in three dimensions."

On the steps of the Archives Building in Washington is inscribed the motto: "What is Past is Prologue." A visitor one day asked a cabdriver the meaning of the motto. "Well, Mister," the cab driver answered, "roughly it means 'You ain't seen nothin' yet'." I do not want to predict what the ultimate will be for the telephone industry, but if the past and the present are any criteria for the future, I can only add: "You ain't seen nothin' yet."

bulk-energy supply to the home user. If development work proves successful, home gas-air conditioning may provide still another bulk home use of gas.

Of course gas has also continued its development as a bulk-energy supplier to industry, but the really important thing from the standpoint of gas economics seems to me to have been the development of large volume sales to individual domestic customers. In the first place, existing gas-distribution systems, in general, can increase their capacity to serve larger loads to present customers substantially with but a relatively low investment for system reinforcement. This fact, coupled with the trend to large volume sales to individual customers, has been of great help to the gas-distribution companies in keeping pace with inflation thus far.

NEW AREAS

Second, these large volume sales make it economically possible to extend gas service into new areas, even at today's high cost of constructing main extensions and services. Without such sales for space heating, the growth in customers we mentioned would not have been practical.

Moreover, the good-load-factor domestic loads of cooking, water heating, and refrigeration, and such other domestic loads as clothes drying and incineration tend to follow along with domestic space heating. Therefore, in my opinion it is the space-heating load that is the real key to continued high-level development in the gas industry and that therefore has now become the industry's basic load. So let us think of gas first in terms of economical bulk-energy supply to the home and to industry.

NET PRODUCTION

Since natural gas presently represents nearly 95% of the gas business, let us see what has happened to its production. Net production has increased from under 5 trillion cubic feet in the year 1946 to 9.2 trillion in 1953. My own forecast is that this will rise to a little over 11 trillion cubic feet by the year 1957.

NOT ALL FOR UTILITY INDUSTRY

Not all of this gas, however, is for the utility industry as we think of it. Substantial reported annual volumes for "losses and waste" and a rising requirement for "field use," coupled with direct sales by the producers for carbon-black manufacture, petroleum refining, and other local industrial uses, accounted for over half the net production in 1946. In spite of rapidly rising natural-gas utility requirements over the period, these items still accounted for over a third of the total net production in 1953.

To obtain a figure related to net production of natural gas but including only the total firm requirements and interruptible deliveries of the natural gas utilities, together with the requirements of the pipe-line companies supplying those utilities, I have developed an approximate figure for the total supplied to the natural-gas utility and pipe-line industry. This figure shows an increase from 2.4 trillion cubic feet in 1946 up to just over 6.1 trillion cubic feet in 1953. My supply data then fit in with the four-year estimates being made annually by the American Gas Association, the latest of which indicates that, by 1957,

the total deliveries will have risen to 7.7 trillion cubic feet a year.

GROWTH HAS BEEN TREMENDOUS

The growth has been tremendous over the past eight years, and, although the rate of growth has slowed up slightly, as most areas in the United States have been converted from manufactured to natural gas, the continuing expansion of the country as a whole brings with it estimates of continuing growth for the next few years, at rates only slightly below those of the period we have just experienced.

I am told that, during the 1930's, the population of the United States increased by about 9 million people, that, during the 40's, this growth increased to about 19½ million, and that, if the rate of growth of the first five years of the 1950's continues throughout the present decade, the increase in population for the 1950's will be 29 million. This population growth means more housing; and more dwelling units mean more potential market for bulk-energy sales by the gas industry.

RESERVES

What about the natural-gas reserves to cover these requirements? The statistics show a rising reserve trend over the period, in spite of the tremendous increase in production over the past eight years.

The figure at the end of 1946 stood at 160.6 trillion cubic feet, which by 1953 had increased to 211.4 trillion cubic feet, with preliminary figures for 1954 year end indicating a very minor rise to 211.7 trillion cubic feet. The AGA estimates for the next few years indicate that supply available to the pipe-line companies to meet growing markets is not far from being in balance.

UNDERGROUND STORAGE

One development that has helped the natural-gas industry tremendously in meeting the space-heating needs of its customers, while still maintaining a good over-all annual load factor on the supplying pipe lines, has been the tremendous recent growth of underground storage. Back around 1946 the estimated total reservoir capacity of some 60-odd storage pools in eleven states was around 200 billion cubic feet. Today over 170 pools in seventeen states have total reservoir capacity of almost 2 trillion cubic feet.

In the winter of 1953-54, over 5 billion cubic feet were taken out of storage to serve residential space-heating customers on the peak day—about five times the daily capacity of a major pipe line like Panhandle Eastern. By the winter of 1957-58, it is estimated that this figure of maximum daily availability from storage will grow to 9.8 billion cubic feet, and will account for 25% of the total gas sent to market on the peak day in that year.

Underground storage, as you know, lets the gas business place low-valued summer gas into underground formations, which formerly held gas, oil, or even water, and hold it there until the following winter season, when it is brought out to meet the day-to-day requirements of the heating customers, particularly on the extremely cold days. In terms of the volume of gas that can be delivered on a peak day, the investment in a storage field may be only one fourth

to one fifth of the equivalent investment that would be required in a pipe line extending back to the major gas fields. Storage therefore contributes a tremendous economic benefit to the gas industry, not only dollar-wise but also in terms of meeting the real desires and needs of the gas industry's customers.

We have discussed the property and asset accounts of the gas industry, its sales volumes, and its annual revenues. Perhaps this is a good time to say a few words about its earnings picture.

If we review the total gas-utility and pipe-line industry, operating revenues have risen from \$1.5 billion in 1946 to over \$4.6 billion in 1954, an increase of about 205% for the period. Net income has risen from \$203 million in 1946 to \$449 million in 1954, an increase of about 122%.

However, the rapid rise in the cost of gas purchased in the field, coupled with the regulatory lag, that I am sure most of you know about, has kept the rate of return to many of the elements of the gas industry at a somewhat substandard level in recent years. It is my belief that a stabilized or leveled-out field price of gas, together with the clearing of the rate-case dockets at both the FPC and the state commissions, would show us that, even though the net income for the industry was at an all-time high in 1954, there is still room for betterment under a situation with less rapidly shifting cost elements.

PRICE

The subject of the price of natural gas in the field brings us to the most intriguing question within the gas industry today: Shall the producers of natural gas be freed from the Federal Power Commission regulation, under which the Supreme Court's Phillips decision has placed them? The producers say that they must be completely free of all Federal regulation or the supply of gas for interstate commerce will not expand with the markets.

No one will want to sell to interstate pipe lines, and uncertainty concerning profit will deter wildcatting. Only time can tell whether or how much this position is overstated.

At the other extreme, many of the state and city bodies want full regulation on the strict basis of a limited return on depreciated original cost. It is clear to me that this alternative would be detrimental to the supply picture.

HIGH-INVESTMENT FIXED FACILITIES

On the other hand, we cannot overlook the fact that gas pipe lines are high-investment fixed facilities, and that they run from specific fields to specific markets. They are dedicated to the markets they serve, and their supplies, in turn, are dedicated to them.

Gas is not like coal or oil, which can be sold competitively in a shifting pattern to any ultimate markets and can be transported from source to market by such alternative means as railroads, trucks, barges, or even pipe lines, and may be stored relatively easily when it reaches its destination. The rigidities in the gas business mean that specific reserves must be committed to specific pipe lines which serve specific markets. Under such conditions, all elements of the business find themselves affected with the public interest, whether they wish to be or not.

Direct competition sets a ceiling on the price levels of distribution company sales to ultimate consumers. Within these limits, the distribution company, the pipe line, and the producer must cover their costs and make their return or profit.

DIFFERENT TOP LIMITS

Because facts differ on competing prices at the market level and on costs of transmission and distribution, there will necessarily be different top limits in the prices that various pipe lines can pay for gas in the fields. A pricing framework or set of "ground rules," which would let each pipe line work out its own problems, might well do the job. Today, the so-called "favored nations" clauses, spiral escalation clauses, and formula renegotiations clauses, which have crept into many gas-supply contracts, act to nullify effective price negotiation by the pipe lines.

The desirable end result of all this, in my opinion, would be minimum regulation, spelled out by statute and not left to the whims of changing commissions, to provide protection to the distribution companies, particularly in regard to continuity of supply and relative price stability, and still not stifle exploration. I believe that such a practical compromise is possible, but, if I had to guess, I would say that none would be forthcoming in this session of Congress.

COMPETITION SETS THE LIMITS

Of course, ultimately competition sets the limits, whether at the retail market level, the city gate, or back in the gas fields. At the city gate, known techniques for manufacture of interchangeable high-Btu oil gases may well set an effective ceiling to pipe-line prices, and through them to prices in the field.

In the long run, alternative gases from other hydrocarbon sources—for instance, the partial gasification of coal—may not only provide a ceiling to natural-gas costs but, under suitable economic conditions, may also in time turn out to be a feasible supplemental source of supply for the gas industry. But that carries us well into the future.

JUDGMENT OF THE MARKET PLACE

Perhaps we can conclude here by considering the judgment of the market place concerning the gas industry and its prospects, as it expands its markets and facilities to grow with our great growing country. Where, a few years ago, gas common equities were generally available on lower price-earnings ratios than those of its sister utilities, today's prices appear to reflect full investor acceptance.

A broad list of pipe-line companies, some of which are also producers, were recently selling at 19 times earnings, on the average. Gas-distribution companies averaged 16 times earnings. By comparison, AT&T was selling at 15.1 times consolidated earnings, and Moody's 24 electric-power commons at 16.7 times.

Yields were 5.0% for AT&T, 4.43% for the 24 electric companies, and Moody's averages for gas common yields ranged from 3.93% for 10 gas-transmission companies to 4.57% for 10 gas-distribution companies. I would conclude that, in spite of the fussin' and feudin' over regulation, things in America's sixth largest industry—gas—look good.

An Economic Appraisal of the Electric Utility Business

EDWIN VENNARD*

I SHOULD LIKE TO DISCUSS two phases of the electric utility business, not because they are the most important, but because I think possibly they are two phases that have not received the attention they deserve. My two principal points of discussion will be (1) the effect of the new economic climate on the per cent return in the power business, and (2) how to design a sales program in order to bring about a greater utilization of the investment.

The electric utility industry has about doubled its sales in the past ten years. Yet, the per cent return on total investment today is less than it was then. This fact in itself is evidence that we need to examine both the pricing and sales policies. Many companies are now preparing five-year programs with revised rates and sales plans that will change this down trend to an up trend in per cent return.

Possibly the most significant characteristic of the power industry up until about ten years ago was this: The average cost of making a unit of electricity constantly declined with increased production from about 1902 to about 1945.

That significant characteristic, of course, had an important bearing on the pricing policy of electric utility companies. It enabled them to reduce rate schedules constantly, but, more important for our discussion today, that factor had a bearing on the rate design which, as you know, in most instances brings about an automatic decrease in average rate for all increased use.

That is to say, the price you pay in your home for electricity today automatically goes down with increased use of service. Despite that fact, we are experiencing in our economic climate a gradual rise in unit prices, and yet in most instances we have not reflected that change in the over-all economy, in the slope of our rate schedules.

Consequently, it seems advisable for electric utilities not only to consider raising rates to produce additional revenues for the current year but also to consider a change in the style of rates or in the slope of the rates. Except as we do so, we may have to apply periodically for rate increases as long as inflationary conditions continue. A brief review of a few indexes will illustrate the point.

I am going to deal now with a number of unit costs, not total costs but unit costs so as to adjust for volume both in revenue and kilowatt-hour sales. That is the popular and so-called handy index of the unit prices of steam generating units (Figure 1).

I show that to illustrate the point that these unit costs constantly rise and seldom go back down. The chart illustrates the index from 1911 through 1954.

The greatest drop amounted to only about 10%. Notice that, in 1954, the unit costs were almost double what they were just ten years ago.

Many people are of the opinion that these unit costs go up and down, but it appears that there has been a con-

tinued rise and a sharp one since 1945. It appears that this may continue upward for some time. The few declines have been slight.

One of the principal factors in pricing the commodity of electricity is the so-called power pool investment (Figure 2). That is the investment in power plants and transmission system. That constitutes something a little better than half of the total investment in the power business.

From 1940 to date, the chart shows the actual money, new money, invested in the power pool in the power industry. The black line shows the average investment per customer.

Now, normally up until about 1940 or 1945, that average investment per customer was going down as we obtained greater saturation in customers. I assume that from 1954 through 1960, on that basis, the investment costs might level off, that the inflation might stop. I do not think it will, but let us assume that it will. Even so, the average investment cost per customer will keep on rising as we have a higher percentage of plants in high-priced equipment.

Figure 3 shows the same principle for the distribution investment per customer. The chart shows the actual investment by years in the power industry, and the black line shows the average investment per customer rising, from 1946 through 1954. If we level off in inflation that average investment cost per customer will keep on rising, despite the fact that we are getting higher density of customers.

Possibly the most important factor in pricing is the total investment per kilowatt (not per kilowatt-hour). Up until about 1946 this average investment cost was declining, which might be expected as we build larger plants and interconnected systems. However, since 1946 the average investment cost has been rising.

OPERATING TRENDS

Let us review a few unit operating trends. It appears best to review these on a unit basis so as to adjust for volume. This illustrates a very important point in rate making and pricing: that is, the operating cost expressed in production against per kilowatt-hour. You are all familiar with that rise. Figure 4 shows the trend in production expense in mills per kilowatt-hour generated.

Figure 5 shows the operating expense of salaries and wages per dollar of gross revenue. We have been reducing that a little since about 1948, but it is still about 25% higher than it was ten years ago.

Figure 6 gives the trend in transmission expense in mills per kilowatt-hour sold. It has been rising, despite the fact that we have been generating and transmitting greater volumes of electricity.

Figure 7 presents the distribution expense per customer, and the customer accounting and collection expense per

*President, Middle West Service Company.

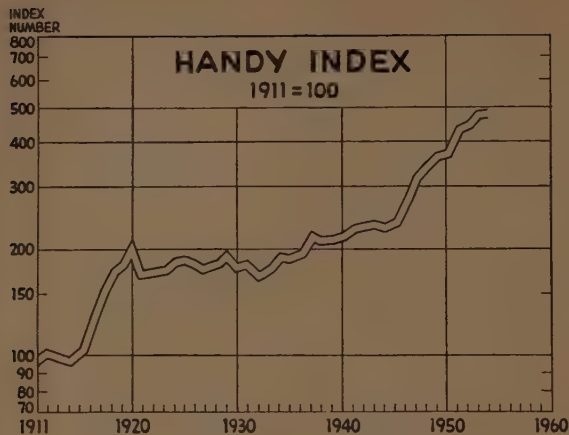


Figure 1

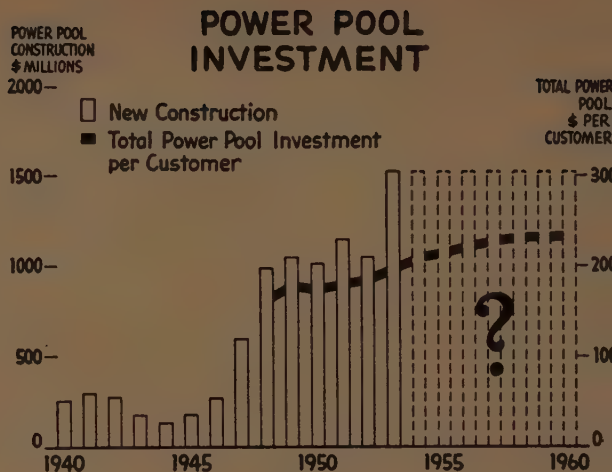


Figure 2

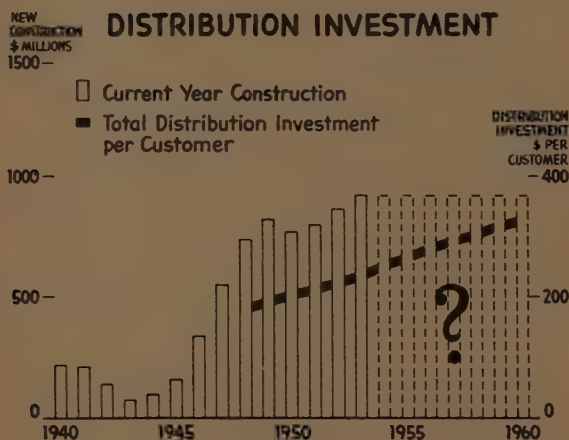


Figure 3

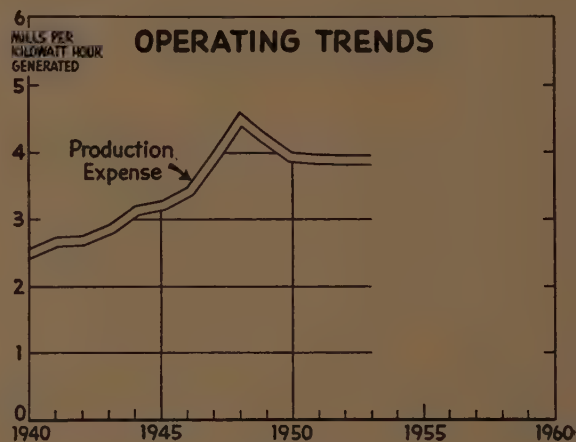


Figure 4

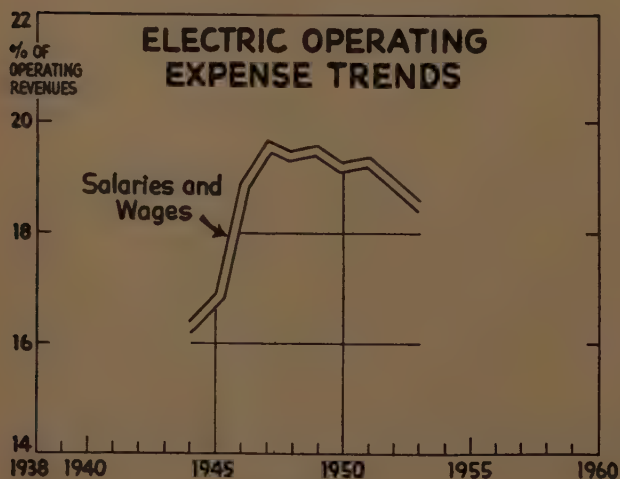


Figure 5

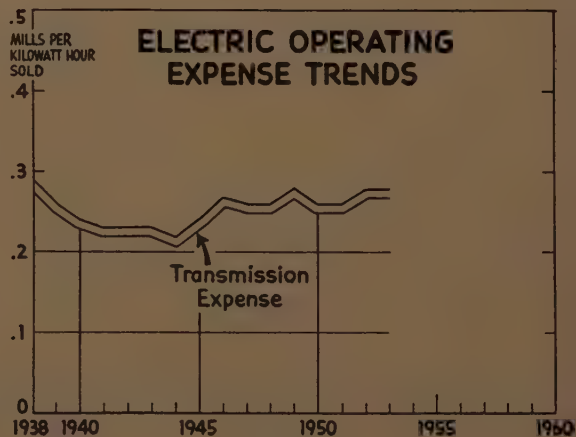


Figure 6

customer. Again, despite an increase in number of customers, we are showing a rise in the operating costs, in the distribution expense, and in the cost of collecting our bills and accounting for the bills.

In Figure 8 are presented the administrative and general expense and sales promotion expense, both expressed as per cent of operating revenue. We are holding the administrative and general expense about constant. In my opinion we could spend more money on sales expense and still make more money, more for the stockholders.

In Figure 9, I have endeavored to reflect the over-all cost of furnishing service per unit of electricity from the year 1902 through 1954. Note that there has been a general decline up until about 1943.

Line A shows the total cost including taxes but not including the cost of money. It illustrates the widening effect of taxes expressed in cents per kilowatt-hour. Line B shows the total cost with the exception of taxes and the cost of money.

Line C shows the total over-all cost, assuming a fixed cost of money at 6% on the gross plant. If I take the actual cost of money during that period or the actual return, that line will come close to gross revenue, of course, but to find these trends we have to assume some fixed cost of money over a certain period, or else the line is simply the total average rate.

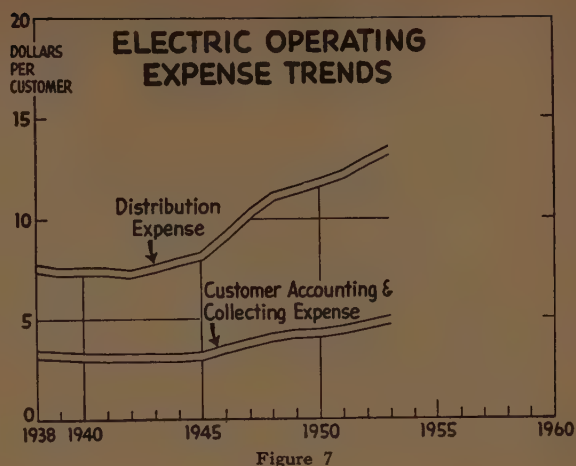
Note that there was actually a rise in the total cost of making a unit of electricity from 1943 until 1949 despite the increased sales during this period. There has been a decline since 1949 as we have brought into operation the new and more efficient generating units.

However, the average cost of furnishing a unit of electricity in 1954 was about the same as it was ten years ago. Bear in mind that, during this ten-year period, all rate schedules with their sliding-scale feature brought about an automatic reduction in average rate for all increased use. Consequently, companies throughout the United States have found it necessary to apply for rate increases in order to maintain an adequate return.

Figure 10 shows the typical rate schedules of an average company, illustrating how they slide downward with increased use. On the left-hand side at the top is the residential rate schedule. The right-hand side shows the commercial rate and the industrial rate schedule. The bottom portion of each chart shows the kilowatt-hours per month used, and the left-hand side the cents per kilowatt-hour, illustrating the point that standard rate schedules bring about an automatic reduction in average rate of all increased use, despite the fact that we are not experiencing a decrease in the cost of making a unit of electricity.

Figure 11 illustrates the squeeze that is bringing about one of our problems today, making it advisable for all companies to pay more attention to the economics of their business. That is the actual average residential rate in the power business from 1940 through 1954. It has gone down actually to that extent. That covers about fifteen years.

In Figure 12 is depicted the total average rate for all classes of service of the electric industry as it would have been if the industry had obtained no rate increases. I simply took the rates of 1948 and applied those rates to the



kilowatt-hours that were sold by classes since 1954. This shows the effect of the sliding-scale feature of all the rates combined.

In Figure 13 is the actual total average rate for the power business showing it has been rising slightly. In other words, the industry has been keeping itself on a sound financial basis by these periodic rate increase that regulatory bodies have been allowing and advisedly so.

Figure 14 indicates how the sliding-scale feature of the rate continues to take the price down too steeply even though we have already obtained numerous rate increases. In other words, we have not devoted sufficient attention to the slope of the rate schedules.

We have increased them more or less across the board, whereas we should have increased them proportionately more in the bottom steps and the intermediate steps. We may continue to have them slide downward with increased sales but less steeply. If we do this, we can then count on our sales effort to improve the earnings for the future.

To illustrate my point, it seems to me that we have not redesigned our rate schedule properly. Most companies are bringing about increases across the board to get the dollars they need to make them hold this year, but they are not systematically changing the slope of their rate schedules. I do not mean that we should have rates that slide up with increased use. I mean they should slide down less steeply.

The top line shows the actual price of the cost of making a unit with a 6% return. The dotted line shows the actual average rate, something less than 6% return. My percentage of return, by the way, here simply means the net operating income divided by gross plant. I am not saying gross plant is the rate base. It is simply an index.

The upper dotted line in Figure 14 shows the projected cost of making a unit, and the bottom dotted line shows where the average rate is going if we do not change the slope. My point is: We should increase the rates and then change them so that they slide down less steeply.

In other words, raise both bottom and intermediate steps more than top steps. In any commodity where we lower

% OF
ELECTRIC
OPERATING
REVENUES

ELECTRIC OPERATING EXPENSE TRENDS

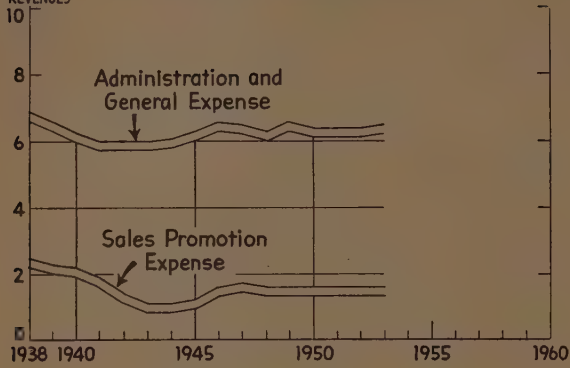


Figure 8

ELECTRIC COMPANIES ELECTRIC COSTS

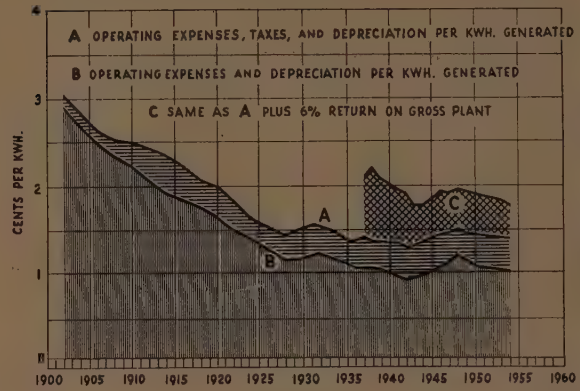


Figure 9

TYPICAL RATES

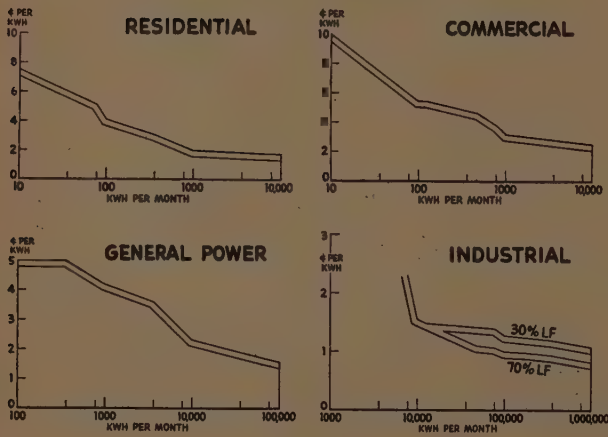


Figure 10

CENTS PER KWH

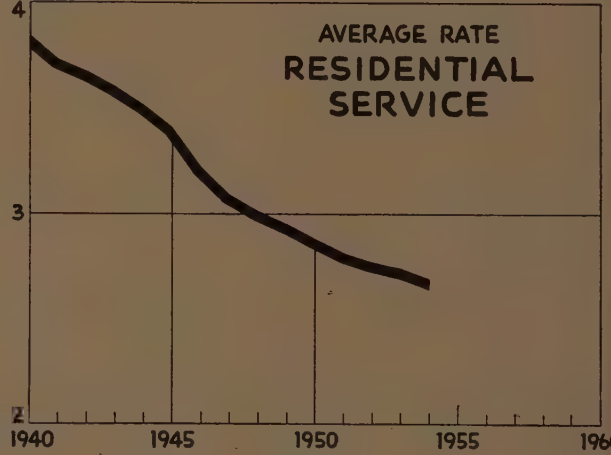


Figure 11

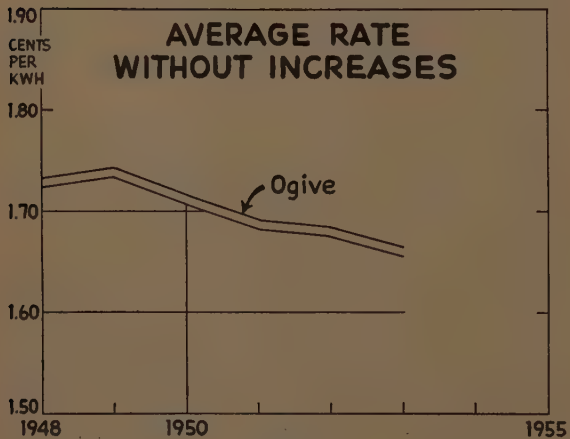


Figure 12

CENTS PER KWH

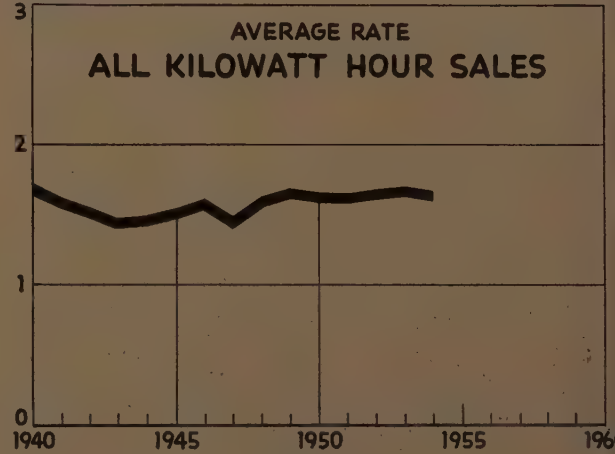


Figure 13

our per cent return with increased sales, it is wise to examine our whole pricing policy, and that is what has been happening in the power business.

Figure 15 shows the per cent return on gross plant for the industry as it actually was in the past five years and as it will be in the next five years without further rate increases. We can expect more rate increases in the coming years. This chart simply illustrates that the slopes of the rate schedules are still not right for the existing economic climate. They still go down too steeply with increased sales.

Per cent return was almost 8% back in 1927, and it is down now to something less than 5% on gross plant. The important point is that we experienced a decline in per cent return during a period when sales were doubled.

In any business where we increase our sales we should aim to increase the per cent return, and if our rate schedules were designed properly for existing economic conditions with rising prices, we could then through selling effort bring about an increase in the per cent return.

If things go on the way they are, and if we do not change the slope in our rates at all and do not get any more rate increases across the board, the per cent return for the power business for 1955 through 1959 will actually be something slightly under 5%. I do not predict that will happen, because I think we are going to get the increases we require, as we have done in the past.

Figure 16 shows the increase that is required by years for the industry to reach a 6% return on gross plant. Note the point I am trying to illustrate is that it takes a rising increase in revenue. If an 8% increase is sufficient in 1954 a 10½% increase would be required in 1959—meaning again that we must change the slope.

The present residential rate of a typical electric utility company is shown in Figure 17, with a bottom step of somewhere around 1.7 cents a kilowatt-hour. This chart shows how the bottom step might be raised to an appropriate level of about 2½ cents a kilowatt-hour.

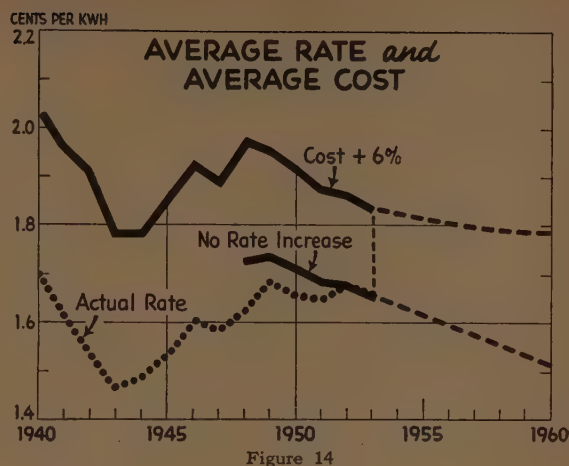
Actually the whole level of the residential rate would be increased somewhat as residential service in most companies is now earning a low return. It is especially important to raise the bottom and intermediate steps so that sales can help improve earnings.

In this chart I have illustrated how the rate might then go down to something like 1½ cents for the larger users having a good load factor. When the rate is handled in this fashion, we eliminate the unpleasant features of the residential demand charge.

A word about the residential demand chart. This has been a bugaboo in the industry and has given the whole demand principle a black eye. I would like to lay it to rest for the moment and merely say that it has a black eye because it has been wrongly applied. It should get a black eye the way it is being applied now.

We ought to correct the basic error in the rate schedule and get the bottom step that is now about 1.7 cents to 2½ cents per kilowatt-hour. That is where it would be if we had designed our rates for the present economy.

Once we get the rate from where it is now up to where it should be, then we can reduce it if we want to for im-



proved load factor. That is a fundamental principle in selling. Give a man a discount for a good load factor instead of a penalty for a poor load factor. It is just simple psychology of selling.

So much then for rate making. Now a word about how to sell the improved load factor.

During the years when the average cost of making a unit of electricity was going down, any reasonable sales program that brought about an increase in volume would result in improvement in earnings as expressed in per cent return on total investment. That is not true today. Increased volume alone will not necessarily improve earnings, as witness the results since 1945.

Over the past ten years or so, the industry has learned a great deal more about the elementary economics of the business. To obtain this knowledge, we needed to know the operating characteristics of the various appliances and appurtenances that make up the total use of electricity.

We needed to know the diversified hourly demands of the appliances. We have gained a great deal of this knowledge through the load research activities of many companies as co-ordinated through our load research committee.

With this knowledge we can make cost studies more accurately. We can determine which rate schedules and which steps in the rate schedules are faulty, and we can design sales programs to obtain not only increased volume but greater utilization of investment.

Most companies are conscious of the economic benefits of improved load factor, but let us review a few charts to illustrate the magnitude of the possibilities in this field.

When you are in a business where the cost of making your commodity decreases with increased use, almost any kind of sales program that increases volume will probably improve your earnings. Most power companies have sought volume and volume alone, and up until a few years ago that was fine.

Today volume alone will not help. Indeed, if we had doubled the sales in the past ten years, we would wind up with a lower per cent return than ten years ago. Today's economic conditions require that we give greater attention

PERCENT RETURN

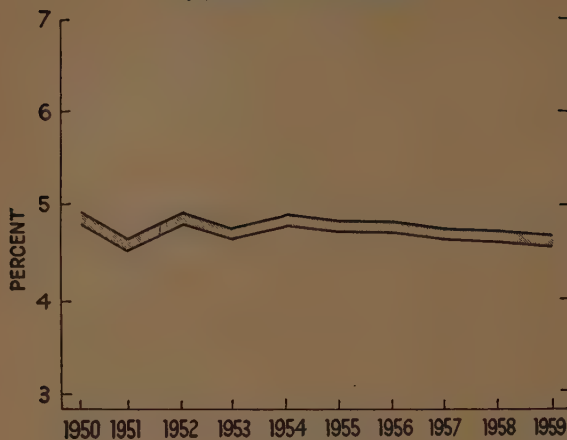


Figure 15

INCREASED REVENUES NEEDED TO EARN 6%



Figure 16

UTILIZATION OF INVESTMENT

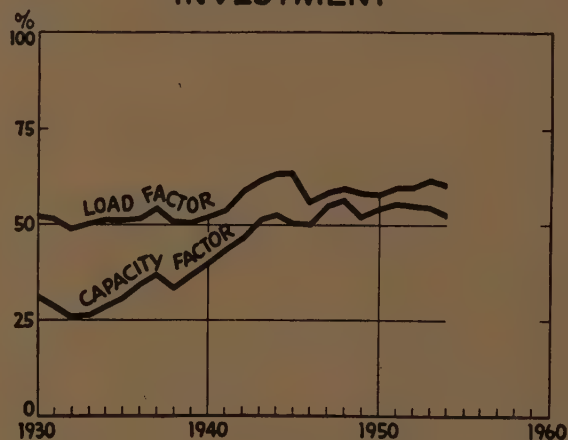


Figure 18

THE RELATIONSHIP BETWEEN PERCENT RETURN AND PERCENT LOAD FACTOR

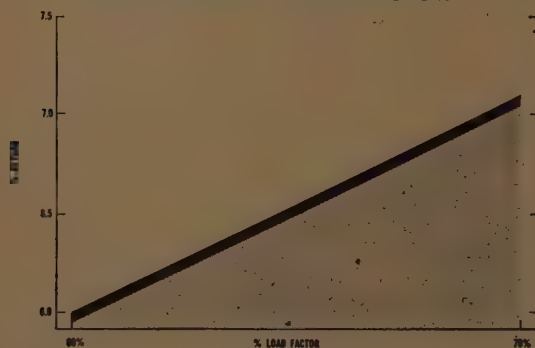


Figure 19

THE ELECTRIC RANGE Typical Individual Daily Load Curve

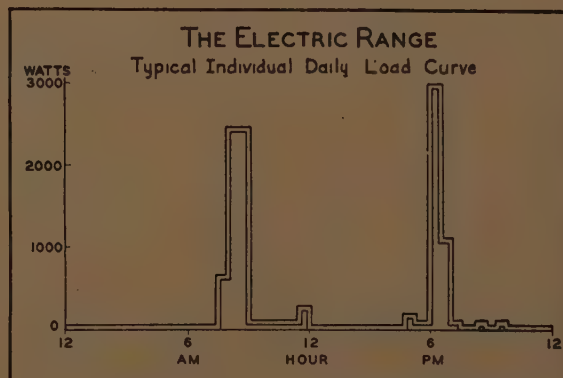


Figure 20

to selling in such a way as to improve utilization of investment.

The utilization of the investment of the industry from 1930 through 1954 is depicted in Figure 18. This shows both the load factor and the capacity factor.

To obtain the load factor, we simply divide the kilowatt-hours generated by the kilowatt-hours that would have been generated if the company had sold kilowatt-hours around the clock at the same rate of delivery that the kilowatt-hours were sold during the maximum hour. To obtain the capacity factor, we divide the kilowatt-hours generated by the kilowatt-hours that might have been generated if all generating equipment were operated every hour at full capacity. In other words, the difference is the per cent reserve capacity.

We have made improvements over the past years, but we are still utilizing our investment only about one-half the time. This is especially important in the public utility business, as distinguished from the manufacturing business, because in the utility business there is invested about \$4 for each dollar of annual gross revenue, whereas the ordinary manufacturing business has invested only about 40 cents for each dollar of annual gross revenue.

Figure 19 shows the relationship between per cent return and load factor, all other conditions remaining constant, and providing, of course, that the rates are at a satisfactory level in all the cases. If rates are satisfactorily designed, an improvement of 10 percentage points in load factor would bring about a whole percentage point increase in per cent return on total investment.

Let us illustrate the magnitude of the possibility in another way. We have heard a great deal about the atomic energy and the benefits from it. Rightly, the utility industry and the manufacturers are doing everything they can to bring about the greatest benefits possible and practical from the use of atomic energy.

Also, they are continuing their efforts to improve the efficiencies of the generating equipment. At a recent meeting of engineers it appeared that there was a possibility of reducing production cost by some 2 mills per kilowatt-hour over the next ten years with the use of atomic energy and with the further improvements in plant efficiencies.

I do not mean to minimize the importance of this, as it is a saving well worth seeking. If we can bring about these economies, the result will be an improvement of 1.14 percentage points in per cent return.

Working backward to load factor, we find that an improvement of 9.6 percentage points in system load factor will result in the same improvement in per cent return on total investment. We need to devote more thought and study and research in this field.

From the studies we have made of numerous companies, it appears that an increase of 3 or 4 percentage points in load factor over the next five years is not unreasonable if we utilize our present knowledge in the design of a sales program to bring about these results. Let us illustrate the technique by a few charts.

Figure 20 shows the typical individual daily load curve of one range as found from load research. We know the

THE ELECTRIC RANGE REPRESENTATIVE DAILY LOAD CURVE

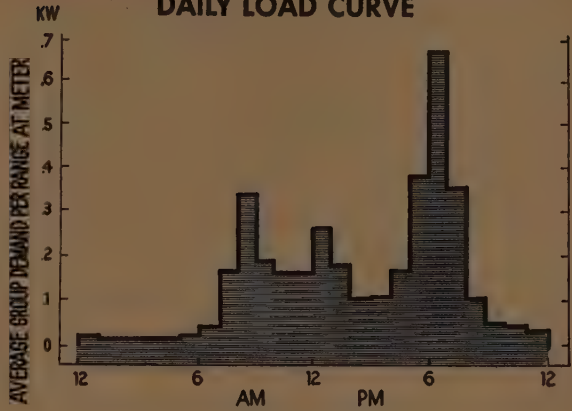


Figure 21

load characteristics of our appliances—the first step in designing a sales program.

Figure 21 shows a typical daily load curve of many ranges showing the effect of diversity. The peaks, of course, are in the evening. We know that by measurement.

Figure 22 shows the typical load curve of water heaters that are controlled for off-peak operations, that is, kept off the feed during the night hours.

In Figure 23 we have superimposed the diversified load curve of the range on the load curve of the water heaters to show how the two fit together. That shows the combination of the range and the waterheater in order to utilize the knowledge of economics in selling the building load factor. The combination of those two has a higher load factor than any one of them separately.

This technique is carried on for all the major appliances of a subject company. Here are the steps that we take:

1. By a sampling process we determine the per cent saturation in major appliances for the previous year.
2. We determine the sales of major appliances by company and dealer, as planned under present sales efforts by years for the next five years.
3. By using the daily load curves of the major appliances and knowing the number of these appliances on the line, we build up the residential load curve synthetically. This is illustrated in Figure 24. Once we have that load curve, we can calculate the load factor of that class of service for that year.
4. We then do the same thing for the year five years hence, based on current sales activity, and then calculate the load factor for that year.
5. This study points out the changes in the emphasis on the sales of various appliances that can result in improvements of load factor. Consequently, we then design a revised sales program that will get satisfactory volume and satisfactory improvement in load factor.

Figure 25 shows the three principal load curves of the three classes of service of a typical company. Figure 26

THE ELECTRIC WATER HEATER REPRESENTATIVE DAILY LOAD CURVE

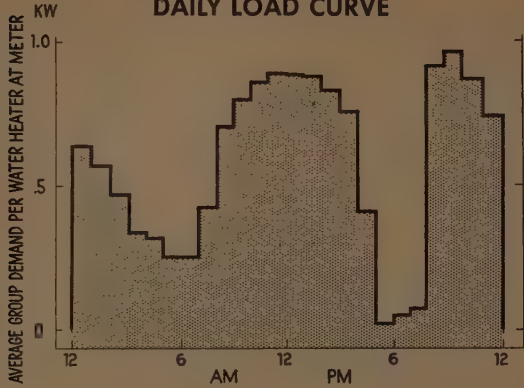


Figure 22

RESIDENTIAL SERVICE REPRESENTATIVE DAILY LOAD CURVE RANGE AND CONTROLLED WATER HEATER

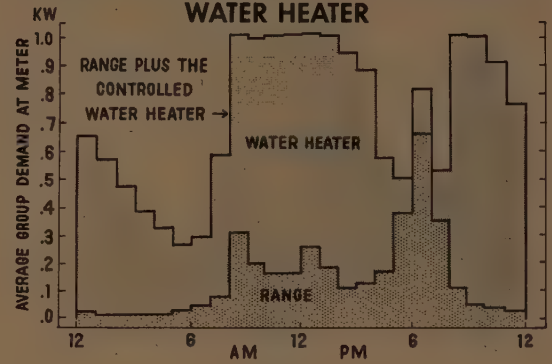


Figure 23

TYPICAL RESIDENTIAL DAILY LOAD CURVE

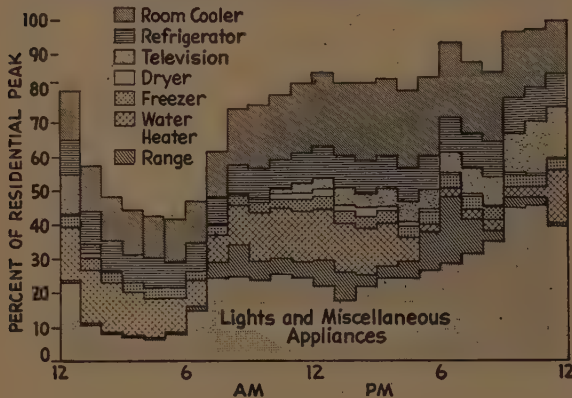


Figure 24

TYPICAL SYSTEM LOAD CURVE

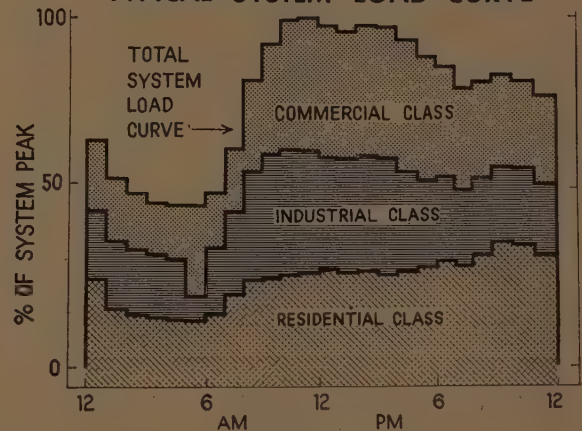


Figure 25

WHAT A NEW BUSINESS PROGRAM CAN DO

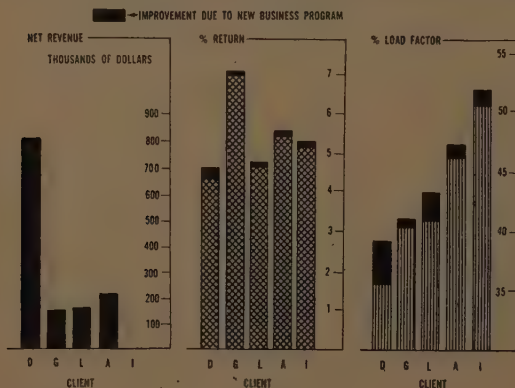


Figure 26

TREND IN PERCENT RETURN

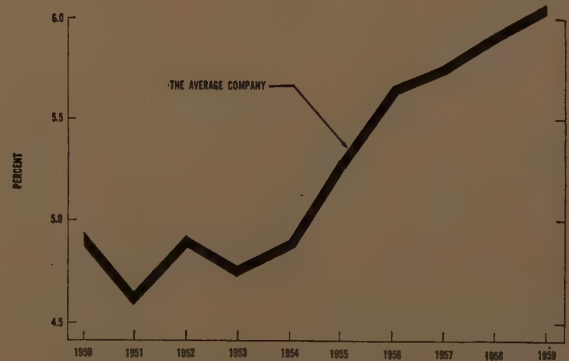


Figure 27

shows the improvements that have been brought about in the load factors of a few companies through this technique.

FIVE-YEAR PER CENT RETURN PROGRAM

Here are the steps that a company might consider taking in the preparation of a five-year program to increase per cent return by suitable revisions in rates and sales.

1. *Five-Year Forecast of Earnings.* With modern techniques it is now possible to forecast earnings more accurately than in the past. The improved knowledge of economics has made this possible. Also, in recent years a new technique has been developed for obtaining revenue from any particular rate schedule. This technique enables the determination of revenues with an error of around 0.2 of 1%—without having to utilize meter readings. The same technique is used in applying rate schedules to projected kilowatt-hours.

2. *Cost Analysis.* Cost analyses are estimates and have their limitations. However, they are excellent guides and almost indispensable in the preparation of programs like this. The analysis shows the per cent return by classes of service, and the cost curve over the whole range of use of each class. From the analysis, a determination can be made of the per cent return by major appliances. It helps in the determination of load factors. It helps in the redesign of appropriate rates.

3. *Revised Sales Program.* The next step is to prepare a revised sales program to increase both volume and load factor as already outlined.

4. *First Revised Forecast of Earnings.* The forecast of earnings in item 1 is then revised to show the effect of the revised sales program. This may or may not be sufficient to cause the proper trend in the over-all per cent return. If the bottom steps of some rates are too low, even the revised sales program may still result in a decrease in per cent return—although less decrease than a sales program not designed to build load factor.

5. *Revised Rates.* With the cost analysis as a guide, a revision is made in the rate schedules. If earnings are

such that the company can justify an increase in rates, the new rates are designed to provide the necessary amount. If earnings are such that the company does not want to seek a general rate increase, then the rates can be properly revised. That is to say, the faulty steps in the rates can be raised to the appropriate level, with corresponding reductions in those steps of the rates where the company has a better margin.

6. *Second Revised Forecast of Earnings.* As a final step in the program, a second revised forecast of earnings is prepared, taking into account the revised sales program and the revised rate program.

Now that it is possible to apply revised rates to projected kilowatt-hours, a company should not finally settle on any new rate schedules, without first applying them to the projected kilowatt-hours and kilowatts over the next five years, to be sure that the rates will earn sufficient return in the future years. We are not designing rates for the past; we are designing them for the future. Too often the company and the commission will simply look at last year's figures with the revised rates applied to the past.

SUMMARY AND CONCLUSION

Because of inflationary conditions and rising costs, the economics of the electric utility business is getting more and more attention. Companies, analysts, and commissions are devoting more and more time to cost studies, to cost analyses, and to rate analyses, in the endeavor to design rate schedules properly to meet present economic conditions and to meet conditions as they will likely exist over the next five years. Also, with improved knowledge of load characteristics, we are now able to design sales programs that bring about the important improvement in the utilization of investment.

A TYPICAL COMPANY

Figure 27 shows the per cent return of a typical company, after applying the new type of rate schedules and a new type of sales program. Note that the per cent return over the next five years will rise with increased sales, whereas heretofore the company has had to rely on periodic rate increases to hold its own.



The EAGLE-PICHER COMPANY

American Building
Cincinnati, Ohio

The Board of Directors of The Eagle-Picher Company, at the meeting May 4, 1955, declared a quarterly dividend of thirty-seven and one-half cents (37½c) per share on the common stock of the Company, payable June 10, 1955 to shareholders of record May 20, 1955. This is the 60th consecutive quarterly dividend to be declared.

CARL A. GEIST,
Vice President and Treasurer



**UNITED FRUIT
COMPANY**

224th
Consecutive
Quarterly Dividend

A dividend of seventy-five cents per share on the capital stock of this Company has been declared payable July 15, 1955, to stockholders of record June 10, 1955.

EMERY N. LEONARD
Secretary and Treasurer
Boston, Mass., May 16, 1955

DIVIDEND NUMBER 44

Interlake Iron Corporation has declared a dividend of 30 cents per share on its common stock payable June 30, 1955, to stockholders of record at the close of business June 15, 1955.



J.P. Hagan
Exec. Vice Pres. & Treas.

**INTERLAKE
IRON
CORPORATION**
CLEVELAND, OHIO

Blast furnace plants in Chicago, Duluth, Erie and Toledo



highlights of the year

	1954	1953	1952
NET SALES	\$40,490,845	\$38,668,126	\$36,442,481
NET EARNINGS BEFORE TAXES	5,769,518	5,115,040	6,431,218
INCOME TAXES	2,880,000	2,988,500	4,429,400
INCOME TAXES PER SHARE	5.29	5.76	8.97
NET EARNINGS AFTER TAXES	2,889,518	2,126,540	2,001,818
EARNINGS PER SHARE	5.31	4.10	4.05
DIVIDENDS PER SHARE	1.50 ¹	1.30 ²	1.20 ³
BOOK VALUE PER SHARE	24.32	21.46	19.53
NET WORKING CAPITAL	9,869,260	8,589,807	5,950,330
SHARES OUTSTANDING	544,425	518,511	493,836

- 1.) \$1.50 per share on 518,511 shares outstanding, plus 5% stock dividend.
- 2.) \$1.30 per share on 493,836 shares outstanding, plus 5% stock dividend.
- 3.) \$1.20 per share on 470,320 shares outstanding, plus 5% stock dividend.

"Engineered Production" Service*

SUNDSTRAND MACHINE TOOL COMPANY

ROCKFORD, ILLINOIS

American Broach & Machine Company, Ann Arbor, Michigan

Copy of our 1954 Annual Report sent on request

*Reg. U. S. Pat. Off.

**SUNDSTRAND DIVISIONS
MAKE WIDELY DIVERSIFIED
PRODUCTS**



HYDRAULIC EQUIPMENT FOR AIRPLANES



MACHINE TOOLS



BROACHING MACHINES



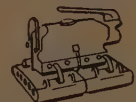
HYDRAULIC EQUIPMENT FOR INDUSTRY



OIL BURNER PUMPS



MAGNETIC PRODUCTS



PNEUMATIC MACHINES



FOUNDRY CASTINGS



CHAIRMAN
WALTER W. AINSWORTH
Metropolitan St. Louis Company

MODERATOR
DAVID W. MC KNIGHT
G. H. Walker & Company

Electrical and Electronics Industry . .

The Outlook for Electrical Equipment

JAMES H. JEWELL*

WE ARE IN THE MIDST of a great chain reaction in markets. This reaction vitally affects the market for electrical equipment.

We know that the chain reaction of exploding atoms releases enormous amounts of energy. But how can we have a chain reaction in markets? Well, the impact of an exploding consumer market on industry can release or open up big markets for electrical equipment.

WHAT IS HAPPENING?

Let us see what is happening in this exploding consumer market. Our population has been increasing at a tremendous rate—over 13½ million since 1950. We have had a boom in babies—last year 4 million were born. Markets are people. So more things are bought, simply because there are millions more people.

PEOPLE HAVE MORE MONEY

Also people are buying more things because they have more money. Personal disposable income has been rising sharply. People are moving into higher-income brackets, and their prosperity has encouraged them to set an all-time record for installment buying.

BUYING MORE KINDS OF THINGS

People are not only buying more things, but they are buying more kinds of things. We in the electrical industry encourage that by constantly offering new products for them to buy. In 1930, there were 19 electrical appliances; today there are 56. Also, we introduced television, and soon color television receivers will be sold in volume.

People are buying not one of a thing, but two or more of it. Television was only recently introduced, but already we have 4% of homes with two or more receivers. Two-car families are becoming common—in fact there are 4 million of them.

With the increased amount of leisure time, with increased education, we find an increasing desire on the part

of all Americans for more of the good things of life. We see evidence of this everywhere in tremendous sales of automobiles, electrical goods, and many other products.

CONSUMER MARKET GROWING FAST

So our population is growing fast, but, even more important, the consumer market is growing faster than population. This explosive expansion of the consumer market has affected almost all industries, whether they make consumer goods or not, for nearly everything contributes to or ends up as a consumer product. Iron ore mined today may soon be part of a home refrigerator, after going through a number of industries.

Industry has the problem of making more materials and finished products. Equally important, it must make them at a cost that will allow a reasonable profit.

Even though people are buying at a tremendous rate, they are canny buyers. They shop around. Competition for consumer goods business is intense. To get maximum volume a manufacturer must keep his prices low, and at the same time offer selling features.

So the consumer goods manufacturer puts pressure on his factory people and his suppliers for better products at less cost. The impact of the consumer goods market, plus the need for greater production at lower cost, has created a revolution in industry.

AUTOMATION

We see signs of it everywhere—especially automation, which has had widespread publicity. Carried far enough, it could end up in the ultimate—an automatic factory.

But that is only one example. Industry is turning to many types of electrical equipment and processes to accomplish the same result—such as induction heating. New plants have a higher complement of electrical equipment, and older plants are forced to modernize electrically.

Here is a quick picture of the trend. Note that production is increasing at a rate of 4% a year, but specially significant is the trend line, on usage of electric energy, which is rising at 6.4% a year. It clearly indicates the trend to-

*Vice-president in charge of sales, Westinghouse Electric Corporation.

ward greater use of electrical equipment in industry, and, of course, larger markets for our industry.

Last year industry used the huge amount of 254 billion kilowatt-hours of electric energy, the amount per industry varying owing to size or processes. Here is the breakdown by industry:

Chemical	15%
Steel	12
Nonferrous & primary metals	14
Petroleum & natural gas	7
Coal	2
Pulp & paper	9
Textile	5
Atomic Energy Commission	5
Rubber	2
Glass & clay	4
Others, including metal working	25

SPECIFIC INDUSTRIES

Now, let us look at specific industries and examine the trend. As a common statistical factor for all industries we are using consumption of electric power in billions of kilowatt-hours. Kilowatt-hours is a true measure of the usage of electrical products, just as gasoline is a true measure of the usage of automobiles.

It follows that an increase in use of electric power means greater use of electrical equipment and processes. These data are from a series of market development studies made by our company.

METAL WORKING

We will turn our attention first to the metal-working industry, which has been in the midst of a period of major expansion, sparked by both military and civilian needs. One feature of special interest is the accelerated use of electric energy per man-hour. For instance, new automobile plants are going into operation with provision for 10 kw per worker, compared to 5 or 6 kw formerly considered normal. In fact, one large automobile plant has designed its assembly plants for 20 watts per square foot, about double that of a few years ago.

Another significant fact is that, in the modern metal-working plant, power per machine tool has about doubled in the past ten years, owing to methods and tools. And, looking ahead, the trend use of power machinery itself is sharply up, and power consumption will more than double from 1954 to 1964—from 7.9 to 20 billion kilowatt-hours.

Also slanting sharply up is another key trend in this industry—the increased use of the electric furnace for heat treating and annealing. Its extensive use is indicated by an estimated consumption of $3\frac{1}{2}$ billion kilowatt-hours between 1954 and 1959.

INDUCTION-HEATING EQUIPMENT

Another trend is the greater use of induction-heating equipment. Note the tremendous increase in usage of kilowatt-hours from 1 billion in 1954 to over 16 in 1964.

So much for the metal-working industry. Now let us look at the chemical industry. In this industry, new products and processes are developing with amazing swiftness.

The expansion of this industry is keyed closely to an in-

creasing use of electric energy. From 39 billion kilowatt-hours in 1954, energy requirements project forward to a probable demand by 1964 of 63 billion kilowatt-hours.

Our forecast for electric consumption in the chemical industry does not include installations operated for the Atomic Energy Commission. Already, these installations are enormous users of electric power and should be considered separately from the chemical industry.

Although, for obvious reasons, few data on this subject can be released, certain key figures speak for themselves. Note the great increase in kilowatt-hours used—from 6 billion in 1950 to an estimated 58.6 in 1959, an almost ten-fold increase. These figures, even without supporting words of explanation, illustrate the tremendous growth and future potential of atomic-energy programs to the electrical industry.

STEEL

Now we will focus our attention on the steel industry. The increasing electrification of this industry is indicated by the kilowatt-hours consumed rising from 24.5 billion in 1950, up to 32.1 in 1954, to 40 in 1959, and 47.8 in 1964—practically doubled in fifteen years. Out of many factors, here are two worth noting. There is an increasing use of the electric-arc furnace for melting, and of high- and low-frequency induction for heating.

Another industry grouping that is important to the electrical industry is the nonferrous and miscellaneous metal industry. Here again we see projected a substantial increase in kilowatt-hour consumption, from 37.6 billion in 1954 to 62.0 in 1964.

ALUMINUM

One very important customer of the electrical industry is the primary aluminum industry. This dynamic growth industry is expected to increase its use of electric energy from 29.0 billion kilowatt-hours in 1954 to 48.3 in 1964.

In the petroleum and natural-gas industry, a steady increase in electrification is indicated, from 12.5 billion kilowatt-hours in 1954 to nearly 26.3 in 1964—up over 100%. Increased use of petroleum products, plus a large increase in chemical by-products from refineries, will account for much of this increase.

Looking ahead in the coal industry, we see increased production from the present low point, greater mechanization, wider employment of continuous-mining machines using more power per ton, and better cleaning of coal. In response to the upward leverage of these factors, we look for a substantial increase on consumption of electric energy from 5.1 in 1954 to 11.6 billion kilowatt-hours in 1964—over double that in 1954.

The increasing use of electricity in the pulp and paper industry will probably parallel the per-capita growth of paper consumption. This growth is currently at a rate twice as fast as the average annual increase of our population. Kilowatt-hour consumption is expected to rise from 25.0 billion in 1954 to 59.1 in 1964—doubled and then some.

The rubber industry is expected to use an increasing amount of electricity per ton of rubber. Production will be affected by the growing rate of automobile production, and many new uses of rubber. The power use is projected

to increase from 4.8 in 1954 to 8.2 billion kilowatt-hours in 1964, or nearly twice that of 1954.

In the glass and clay industry, future use of electric power will reflect a steady long-term average rate of growth from 12.9 billion kilowatt-hours in 1954 to 28.8 in 1964—more than double. Particularly noteworthy as a factor in this growth is the increasing use of glass for structural and decorative purposes in buildings. A second important factor is the increased use of electrical equipment and power for heating and melting glass.

Projections of the textile industry are complicated by wide cyclical fluctuations in business activity. One buoyant factor in our projection is the increasing use of textile-mill air conditioning. Many new mills, particularly rayon spinning and weaving mills, are completely conditioned by refrigerated air-conditioning installations, requiring several hundred horsepower per installation. Because of this and other factors such as the upward trend of the industry, kilowatt-hour consumption is expected to increase from 13.3 billion in 1954 to 28.1 in 1964—over a 100% increase.

AIR CONDITIONING AND REFRIGERATION

A market that has phenomenal growth potential is air conditioning and refrigeration. In 1950 electric energy consumed by all forms of air conditioning and refrigeration accounted for only 8.9 billion kilowatt-hours. It is expected to rise to 58.0 in 1964, better than a sixfold growth.

Three factors favor this spectacular increase. One is greater acceptance of packaged commercial units in offices, small stores, restaurants, and similar locations. Another is the increasing use of air conditioning in industry, especially for critical operations. A recent outstanding development is the heat pump for homes and houses.

Eventually one out of every two homes will be completely air-conditioned. Truly we are in an air-conditioning age with the best yet to come.

RECORD-BREAKING CONSTRUCTION

You are, of course, familiar with the country's record-breaking construction activity. Here electrical work is taking an increasing share of the building dollar, largely due to advancing electrical utilization standards, upward trends in lighting, widespread adoption of air conditioning, and increasing industrial power loads, symbolized by this modern power center.

In Government jobs, we find extensive use of heavy apparatus such as this 83,000-hp motor for a wind tunnel in an airplane laboratory. Electrical equipment is becoming increasingly important in office, store, school, and industrial modernization.

The outlook for lighting shows a virtually unlimited market, pointing to increased sales of lighting equipment in every field. Electricity used for lighting rose from 110 billion kilowatt-hours in 1954 to 160 in 1959 and 192 in 1964.

As you have seen, increasing consumer, industrial, commercial, and Government usage of electric energy are all contributing to spectacular utility load growth and sale of electrical equipment to utilities. Here is an example. Of

the 428 million appliances expected to be sold in the next five years, 4 million will be clothes dryers. To distribute the new dryer load, it will take almost 50,000 25-kva distribution transformers, together with increased generation-and-transmission equipment, and this is only one segment of electrical living. The residential load is expected to grow from 2,540 kw-hr per home in 1954 to over 5,000 in 1964.

DOUBLING THEIR OUTPUT

Utilities have been *doubling their output* every ten years—from 77 billion kilowatt-hours in 1930 to 119 in 1940, to 280 in 1950. This rate of growth is expected to continue, rising to 660 billion in 1960 and 1,213 in 1970.

In 1955 the electric utility industry is expected to produce 437 billion kilowatt-hours. Ten years from now, in 1965, the output is expected to be 897 billion kilowatt-hours.

To reach this goal, the industry will have to install, in the next ten years, capacity to sell an additional 460 billion kilowatt-hours of electricity. This will call for almost fantastic amounts of heavy electrical apparatus: turbines and generators, transmission lines, substations, power and distribution transformers and many other types of equipment.

PROJECTION BY ELECTRICAL WORLD

Let us look at a projection by *Electrical World* on anticipated capital expenditures by electric utilities. Expenditures are in terms of thousands of millions of dollars, but let us say billions to keep it simple. Current expenditures are about \$4 billion a year, rising up to nearly \$8 billion in 1970. Our own projections on the utility industry's generating-capacity requirements indicate that, in the next ten years, capital expenditures by that industry will total almost \$40 billion.

As far as equipment is concerned, manufacturers are ready to move along with utilities. New designs and materials make it possible to build generators with capacities considerably beyond the needs of any projected installation, and the industry is prepared to build turbines as large as any needed in the foreseeable future.

We will need higher-voltage transmission to handle efficiently the mounting power loads. This will call for transformers and other equipment of comparable ratings.

Manufacturers are ready today with both the equipment and the know-how. Present distribution systems are already hard pressed. Higher voltages are inevitable, and manufacturers are ready to move forward with utilities to improve distribution techniques.

We have covered a lot of ground, and so let us look back for a moment. We have observed an exploding consumer market and its chain reaction on industry, and also how industry is making greater use of electric energy and electrical equipment. Then we saw the chain reaction of the several markets on utilities, causing them to expand. Now let us think of atomic energy and some of the opportunities it offers the electrical industry.

Chronicles of the atomic age will look back to 1954 as the pivotal year in the exploitation of the peacetime atom. The key event in 1954 was the passage of the Atomic Energy Act. For the first time, industry was permitted to

build and operate nuclear reactors, and to export them. In atomic power, we see at least three major markets.

The first market, the Government, will continue to be good. The Atomic Energy Commission has installed and has on order tremendous quantities of electrical equipment in connection with its construction programs. It should be a good customer for years to come.

The Navy already has one atomic-powered submarine, the *Nautilus*, and contracts for nuclear-power plants for others are on order. Our company recently received orders for two more plants for submarines. We have been commissioned to make studies on the application of nuclear power to larger ships.

As you may know, the Atomic Energy Commission has launched a \$200 million five-year program for developing reactors for industrial power. Because of the number of theoretical possibilities of building a reactor, the Commission has decided to explore five different approaches at once. Our company is carrying out the work on the first of these approaches that has an important bearing on the utility market.

LARGE-SCALE ATOMIC-POWER PLANT

This will be done through the construction of the first large-scale atomic-power plant near Shippingport, about 25 miles from Pittsburgh, on the Ohio River. The reactor will be underground.

The Duquesne Light Company is furnishing the site and is building and paying for an electric-generating plant. It will also contribute \$5 million toward the cost of the reactor plant. It will operate the plant at no cost to the Government.

Our company's job in this project is to develop, design, build, and test a nuclear reactor to serve as a heat source for generating at least 60,000 kw of useful electric energy. This is about enough to service a city of 100,000 inhabitants. It is scheduled to start sending power through Duquesne's distribution system in 1957.

OTHER DEVELOPMENTS

Here are some other developments. The Atomic Energy Commission has received firm plans for building nuclear-power plants from four investor-owned utility organizations and one public power district. These plants, capable of producing 705,000 kw of electricity would represent an investment of \$205 million.

Of course, the first atomic-power plants do not mean an immediate revaluation in the utility business or in the electrical industry building the equipment. Much of the equipment used in an atomic-power plant is identical with that used in a conventional plant. The main difference is that the uranium reactor will take the place of the coal boiler.

The heart of the nuclear-power plant is the reactor which replaces the boiler. To carry heat away, the pump circulates water under pressure around the reactor. Water from this primary circuit passes through what we call a heat exchanger.

The pressure in the secondary system is not sufficient to keep water from boiling; the result is steam. The steam passes into the turbine, which rotates, turning the generator, thus converting the mechanical energy of the turbine into

electric energy. The electric energy is carried over existing wires to homes, offices, and factories.

The transition from conventional plants to atomic-power plants will be gradual. With the first electric-utility atomic-power plant just now being built, it would seem somewhat premature to predict the future use of atomic energy in power plants.

ATOMIC ENERGY AS FUEL

Nevertheless, as in many other instances, forecasters have made statements in this field. One estimate says that, by the year 2000, about 22% of all the operating power plants will use atomic energy as fuel. Of the new plants built in that year, half will use atomic energy and the other half will still use conventional fuels.

So it seems that the new and the old will be operating side by side for a long time to come.

Another future market for atomic equipment is industry. Equipment designed to meet the special conditions of atomic-power plants is also being found useful in industry.

For example, a special canned motor pump was developed for the *Nautilus*. Originally designed to circulate water between the nuclear reactor and the steam generator, it is now being offered to industry, in several sizes, to pump water or other liquids—even liquid metal—at system pressures up to 2,500 pounds per square inch and temperatures as high as 650 degrees.

A market is developing for research reactors and large quantities of packaged-power reactors. Now that shackles have been removed from the peacetime use of atomic power, big things loom ahead for electrical and accessory equipment in the atomic-energy field.

So far we have been reviewing the long-term outlook for electrical equipment, and I am sure that you will agree that it looks good. It is much easier to make a long-range forecast than a short-range one, but Mr. McKnight has asked me to give you a brief indication of the short-range outlook.

SHORT-RANGE OUTLOOK

The short-range outlook for the electrical industry requires some interpretation. In 1954 the industry backlog of unfilled orders was reduced about 25%, principally as a result of revised military requirements and a breather on the part of the important utility industry.

Much of our industry's heavy equipment has a long in-process time, so that, even though we are experiencing a nice pickup in new orders, the total industry billing will probably be close to 1954 levels. The improvement in new orders is showing up in the consumer, commercial, industrial, construction, and utility markets. Although volume is good, the market is highly competitive. I would estimate that new orders this year will exceed those of 1954 by 10%.

From 1919 to 1954 physical output of industry as a whole increased at a rate of 3.7% annually while that of the electrical industry increased 7.9% annually, more than double that of all industry. The chain reaction of the consumer market, industry and utilities can have only one result—a continued favorable outlook for electrical equipment and an advancing electrical industry.

Electrical Appliances

J. H. CARMINE*

ABOUT TWO YEARS AGO, when your Federation held its Annual Convention in Philadelphia, Philco had the pleasure of entertaining a large group of your members. This group toured our then new television plant, and saw the most recent developments in electronic tubes, transistors, and diodes.

You told us then that you were vitally interested in the electronics and appliance industry; that you believed it was the fastest-growing industry in the country, with the greatest potential for expansion into new fields and applications.

Looking back over those two brief years, I can assure you that you were right. Tremendous strides have been made, not only in the development of new products but also in the application of electronics to more and more industrial processes, communications, transportation, weapons for defense, and to practically every phase of manufacturing. These have been years of remarkable growth.

You are interested in what lies ahead. You do not need a crystal ball to appreciate that the opportunities for growth in electronics appear almost limitless from the standpoint of new products and dollar sales. New companies are entering the field in increasing numbers; existing companies are expanding.

By the very nature of your interests, you are well aware of the forces working within our dynamic economy, that encourage us to look ahead to continued prosperity. The great economic changes of the past twenty years have brought about higher earnings, both real and potential, and a pool of spendable income that no one thought possible a scant two decades ago.

Millions of families have risen out of the low-income brackets to achieve a financial status where they have become eager customers for all the things that make for better living. They have decent homes, good clothing, an automobile, a refrigerator, a television receiver, and a host of other things that they once could not afford. Even after allowing for reduced purchasing power of the dollar and today's higher tax burden, the average family is better off than it ever was before.

GENERAL BUSINESS IMPROVES

One economist says you have to be a "pathological pessimist" to look forward to anything but a good year in 1955. The indications are almost all in favor of a moderate continuation of the present rise in general business conditions.

Those of us in the consumer durables field share in the general optimism. There are, of course, certain areas where business may not match that of 1954 or of the record 1953. In general, however, sales gains are anticipated for most products.

The real driving force behind mounting automobile,

home, and retail sales is the jump in disposable income—that money the consumer can spend almost right away. For the first quarter of 1955, disposable income was up \$5 billion over the first quarter of 1954 and reached a total of \$260 billion. As wages and other income continue to go up, this pool of ready resources may set a new mark through the rest of this year, perhaps averaging as high as \$270 billion.

Automobile sales are leading the prosperity parade. But the impact of mounting truck sales, new records in home construction, and the demand for steel are of major influence on the booming economy. This spring season the automobile industry has captured the interest of the consumer dollar.

This fall season it will be television and products for the home. For example, advances in electric refrigeration have obsoleted millions of refrigerators—if your old refrigerator will not keep frozen foods and ice cream at zero, it is obsolete. Instances of this nature give our industry confidence that it will capture its share of the consumer dollar in 1955.

If we take a longer view, the prospects are even more promising. Home construction is an important index of business conditions. Some economists have warned of overbuilding of new homes.

They seem to fear a glut, and imply that the present rate of 1,400,000 new homes a year is too high. How can that be when we will have 1,600,000 marriages this year, each young couple a prospect for a new home? Rather than be concerned about overconstruction, we should be planning ahead for the tremendous demand for housing five years from now when children who were born during the war years will reach marriageable age.

All these new families offer a whole new market every year for the appliance industry. Each new home family becomes a customer for a heating system, a refrigerator, a range, air conditioners, home freezers, radios, television receivers, washers, dryers, ironers, and a host of small appliances. This market, of course, goes on top of the normal replacement market created by obsolescence, new design, and all the other factors which we have proved over the years exist to keep sales of consumer durables at a high level.

Another factor of major importance in the home market is the result of the "income revolution" which has taken place in the past ten years. Now, more than three fourths of our 37 million nonfarm families have an income over \$4,000 a year. These families can afford \$10,000 homes.

In 1939, only one fourth of these families could afford the equivalent house, then about \$5,000. This is a revolutionary change in the market picture that few people have grasped.

Now, I am sure you are interested in particulars, especially as they relate to the appliance industry. Our mar-

*President, Philco Corporation.

ket-research department has made some careful projections of the probable sales picture for the remainder of this year. Their opinions are supported by independent research groups.

Toward the end of 1954, we figured that sales of refrigerators in 1955 would be approximately 3,500,000. Since that time, we have raised our sights at least another 200,000. This would be an increase over 1954 and about equal the sales of 1953.

The home-freezer market is potentially one of the strongest in our industry. Americans are just beginning to appreciate the convenience of frozen foods in the home. I believe that the forecast of better than 1 million home freezer sales this year will be exceeded, possibly by a substantial amount.

Consumer demand for electric ranges has been strong in the opening months of 1955. We expect that more than 1,300,000 electric ranges will move into homes this year, the highest sales since 1951. Then, there is the new trend to built-in ranges to give additional impetus to sales.

Sales of washing machines are forecast at a new high since 1950, or a total of about 3,700,000 units. Washing-machine sales are expected to pace the sale of dryers to a new all-time high of over 1 million units.

You are constantly asking us about air conditioning, because you share with us the belief that air conditioning is a great, new industry with tremendous possibilities for sales and profits. Last year, there were more than 100 manufacturers in the room air-conditioner industry. The result was overproduction in some areas. At the same time, unseasonably cool weather reduced demand, particularly in the highly populated East.

However, the potentialities of this industry may be measured, in part, by figures which show that sales rose from a mere 200,000 units in 1950 to a peak of over 1,200,000 last year. Based on sales during the first quarter, we expect that 1955 will set another all-time record for room air conditioners.

Most of our inventory problems have been solved. In fact, there are fewer air-conditioning units in the inventories of manufacturers and distributors today than there were at this time last year.

There are fewer manufacturers in the field. The demand is growing as Americans learn that air conditioning is necessary not only for comfort but also for health during hot, humid summer days and nights.

Conservative estimates are for sale of 1,400,000 units this year. I believe it is possible to increase that total substantially.

The air-conditioning market is as big as the love Americans have for comfort. They have learned to enjoy air conditioning in stores, theaters, and many other places of business. Now, they want the same summer comfort in their homes.

Also, millions of Americans are learning that it is as important to keep cool in summer as it is to keep warm in winter. Air conditioning is healthful as well as comfortable. With these two basic merchandising appeals—comfort and health—the market for air conditioning should mount rapidly.

The sharp competition among office buildings for tenants is another spur to air-conditioning installation. Many sections of the United States report that it is becoming more and more difficult to rent office-building space that is not air-conditioned.

A major office building in Pittsburgh has tested and is currently installing a combination heating and air-conditioning system, using room air conditioners. This is the 25-story Henry W. Oliver Building in the heart of Pittsburgh's business and financial district.

The system uses a steam-heating coil mounted in Philco's three-quarter- and one-horsepower room air conditioners. The building engineers report that this method of heating and cooling the building will cost approximately 50% less than the lowest preliminary bid on various types of central air conditioning.

TELEVISION SALES HIGH

Television has shown remarkable strength during the first quarter after surprising everyone in 1954 with sales exceeding 7,300,000 units. Television is not only one of the great industries of our time, but it is also having a tremendous social impact on the people of this country and of the world.

Already, 36 million American homes—3 out of every 4—have a television receiver, and the number of two-set homes is growing by leaps and bounds. This amazing progress has come about in eight short years.

We have made predictions on television sales many times in the past. Some of them seemed pretty bold at the time they were made. Later, we were proved too cautious.

Television has so much to offer the public that it has been impossible for the figures to keep pace with the facts. Right now, technological improvement in television is so rapid that the industry is able to offer the public greater values than in almost any other appliance.

Remember that a television receiver with a 10-inch picture tube cost about \$375, plus antenna installation, in 1947. Today you can buy a 21-inch receiver giving more than 250 square inches of picture for \$169.

In other words, you can get five times the picture for less than half the cost. That is a story of industry performance that has rarely, if ever, been equaled.

Lower prices and greater values are constantly broadening the market for television. The industry sold more receivers last year than ever before, and this year, I hazard the guess, even though it is early in the season, that the industry will again make and sell about 7 million receivers.

COLOR TELEVISION

Now, a word about color television, because I know that is uppermost in your minds. As a result of premature publicity and political pressures, color television was placed on the market ahead of its time.

Some companies in the industry tried to push color before it was ready. The result has been high prices, low sales, limited programs, and public apathy. Color television has made a slow start.

Do not misunderstand me. I have tremendous confidence in color television.

When it is ready, and when the broadcasters are ready

to give the public an adequate color service, then color television will rapidly become one of the great businesses of our day. It has unbelievable possibilities for sales and profits for those companies that market a big picture receiver, comparable in performance to our present black-and-white receivers, at a price the public is willing and can afford to pay.

We at Philco are tremendously optimistic about color television when the right combination of factors is present to make it have great popular appeal. We believe that color will come gradually, and that the backbone of the business for some time to come will be the sale of black-and-white receivers and the viewing of black-and-white programs.

Our company has had an extensive research and development program under way in color television for many years. We have pioneered many of the advances in the color-television art. We have made great strides toward our goals.

For the immediate future, however, we expect sales of color-television receivers this year to be comparatively low. Next year, we foresee a good possibility that sales will rise consistently and that they will reach good volume by the fall of 1956.

Radio continues to be big business, in the face of the growth of television. In 1954, the American people spent over \$1 billion to maintain their radios and to buy 10 million new sets.

The demand continues for new types of receivers like clock radios, portables, and personal sets, in addition to automobile radios. The forecast for 1955 is that the industry will make and sell more than 11 million radios, an increase of almost 1 million over 1954.

You may have noted that Philco recently announced that it will soon go into production on a new completely transistorized auto radio which will be special equipment on 1956 Chrysler and Imperial cars. Eleven tiny transistors replace all electron tubes in this auto radio.

The transistorized radio requires less than one-tenth of the power used by standard auto radios. The vibrator, power transformer, and rectifier have been eliminated from the circuitry.

Road tests have proved these transistors so rugged that performance has been unaffected by hundreds of thousands of miles of driving. We are confident that the use of transistors in radio circuitry will expand rapidly and that a new market for radios of all types is being opened up.

ELECTRONICS FOR GOVERNMENT AND INDUSTRY

For many of us in the electronics and appliance industry, Uncle Sam is a very important customer. I would like to mention just briefly one aspect of this business.

Immediately following World War II, those companies that had been engaged in such activities as military radar and communications reconverted to the production of television, radios, microwave communications, and similar items for civilian use. Others disbanded their electronic production facilities and discharged a major portion of their research and engineering staffs.

When it became necessary to revitalize segments of civilian industry to make defense weapons, it was natural

for the Government to turn to those companies that had maintained their technical and production facilities on electronics. The demand for specialized electronic equipment for the military rose by leaps and bounds.

The total weight of electronic equipment in military planes quadrupled in a few years as airplanes broke the sound barrier and the Government prepared for atomic warfare. Once again, the television and radio industry carried the burden of electronic development and production for the Government.

There has been spectacular progress in this field, especially in guided missiles. Philco is actively engaged in this phase of electronic development and production. Our industry must keep pace with both military and civilian requirements, not only by providing manufacturing facilities to handle this growing demand for specialized electronic equipment, including guided missiles, but by stepping up research and development in all phases of electronics as well.

A corollary to the production of new electronic devices for the Government is the almost completely untapped field of industrial electronics. The surface has barely been scratched in this area.

In 1954, it is estimated that sales of electronic equipment for industry amounted to about \$570 million. This should rise to about \$650 million in 1955.

The use of electronic computers by business and industry is one wide-open market for electronics. Television to control manufacturing processes and improve quality-control methods is another.

Electronic equipment will make airports foolproof and practically eliminate the hazards of commercial flight. It is not unlikely that annual sales of electronic equipment for industry and allied uses will amount to \$1 billion by 1960.

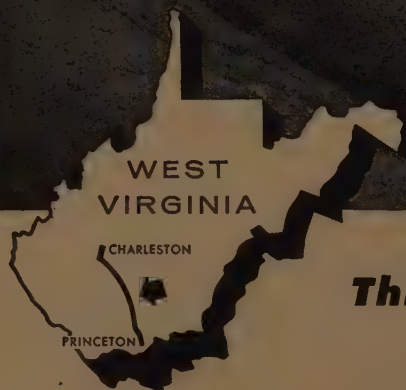
In the past decade, electronics has been in the forefront of those industries making substantial expenditures for research. Witness the array of new products that have resulted—television, electronic devices of all kinds, improved communications, instruments, weapons, and a host of others.

I believe that the electronics industry will continue to lead the parade in the research for new and better products in the years to come. One of the factors that makes our industry strong and insures steady growth in the future is the large expenditure already planned for research and development work in our laboratories.

You can count on our industry to produce the new products required to make this a better, safer world in which to live. At the same time, we will continue to occupy a most important place in our dynamic economy with steadily increasing sales and profits.

However, I cannot leave this platform without emphasizing the highly competitive nature of our industry. Competition is growing and being felt keenly in almost all segments of our market.

The result is an ever-broadening base for that market, as the consumer benefits from lower prices and greater values. All in all, the outlook for the future is good. I am confident that the financial analysts are watching our industry with interest and that they share our optimism.



This new super-highway controls traffic invisibly!

Sweeping South out of Charleston, West Virginia, over, under, and through the mountains to Princeton, are 88 miles of the world's most modern highway—the new West Virginia Turnpike, latest link in the great system of super highways destined to connect the Great Lakes and the Gulf of Mexico.

It's a high-speed Turnpike, with a 60-mile-an-hour limit. Sudden obstructions, rain, snow, or fog could cause havoc. But they don't—

Day and night, invisible Philco Microwave keeps traffic moving swiftly and safely.

At the first shadow of trouble, any one of 10 base stations or 24 patrol cars can instantly alert every other base and car the entire length of the Turnpike. Through Philco Microwave, each unit can talk with any other unit, or with all units in the 88-mile stretch.

For the super-high frequencies used in Microwave provide *private* two-way communication over a distance far in excess of the usual 15-mile radio car range.

It is this same *privacy along a controlled path* that has made Philco Microwave so valuable to the United States Armed Forces, both here and abroad, in building a world-wide network of defense.

By beaming the Microwave signals from point to point across country in a series of relay stations, full horizon radiation is avoided, and the danger of detection or unauthorized eavesdropping is sharply reduced. The system gives advantages over ordinary radio communication, and at the same time is immune to the storm and flood hazards of conventional wire line systems. *Year round, Microwave gets the message through.*

And the flexibility of Microwave speeds

a multitude of military functions. Relay, teletype, telegraph, facsimile, and remote control by Microwave, as well as straight voice communication, are all in active use. Today there are more than 1,000 Philco Microwave units all over the world—more than all other makes combined!

This pioneering and development of Microwave is yet another example of the unique integration of Research with Application that has enabled Philco to contribute so importantly to our country's strength, both in war and in peace.

And the end is not in sight!

The Philco Corporation
Philadelphia 44
Pennsylvania



ANOTHER FIRST FROM **PHILCO** RESEARCH

Industrial Electronics

JULIAN K. SPRAGUE*

THERE HAVE BEEN four great phases in the development of the electronics industry, each of which has added its own great stimulus to the growth of this industry, and each of which today commands an important market. These, in proper time sequence are: communication, broadcasting and entertainment, military electronics, and industrial electronics.

My assignment today is this last important field of industrial electronics. In addition, however, I would like to spend some time on the subject of military electronics for two reasons: first, because industrial electronics is already and will continue to be strongly influenced by the dramatic developments that have come about as the result of the application of electronic principles to modern warfare, and, second, because military equipment is in my opinion destined to remain the biggest user of electronic gear for a good many years to come.

The value of all end equipment produced by our industry in 1954 was approximately \$4.5 billion. Of this total some \$2.5 billion represented defense production, \$1.4 billion represented electronics for the home and entertainment use, and about \$600 million represented industrial electronics for other than military applications. This latter figure of \$600 million may be compared to roughly \$150 million as recently as five years ago and about \$50 million at the beginning of World War II.

Thus, while total end equipment value has grown about fourfold since 1941, industrial electronics has increased by a factor of more than twelve. It appears certain that this growth will continue to be far greater than that of other markets for electronic products for a long time to come.

A precise estimate of the composition of the industrial electronics market is not possible, but in a general way we can think of the present division in round numbers as follows:

Broadcasting and communication equipment	\$250 million
Industrial controls and instrumentation	200
Electronic data-handling devices	100
All other	50
Total	\$600 million

The broadcasting and communications category includes such useful apparatus as radio and television transmitters, microwave relays, and aircraft and marine radios. All these are products with good growth trends, but, because they are familiar to most of you, I would like to turn at once to the new technology of electronics in industry known as "automatic control" or simply "automation."

There are many definitions of these terms, but, in a broad sense, they refer to the recently developed means for controlling manufacturing processes and clerical operations

in such a way that human reasoning, responses, and reactions are no longer needed for routine operations. Fundamental to all such systems is the closed-information loop, or feedback, by which instruments of superhuman sensitivity are used to monitor the operation of an industrial process, feed the resulting information into a data-processing system, which compares it against predetermined control limits and then sends control impulses back into the process to correct any deviations from the set points. Electronic principles are used in many of the most sensitive recording parts of such systems, and it is safe to say that all the more sophisticated systems depend to some extent on electronic data-handling and computing techniques, which have been possible only since the development of electronic analog and digital computers.

To date, more than one half of the \$200 million a year that has comprised the control and instrumentation business in our industry has consisted of instruments for laboratories or special equipment of many specialized types. The balance in true production control devices thus was less than \$100 million last year.

This may be compared to the present total market for control equipment of all types—mechanical, electrical, pneumatic, hydraulic, and electronic, which approximates \$750 million to \$1 billion a year. It is, therefore, apparent that we have only just scratched the surface in this field.

Automatic control through electronics has many advantages in manufacturing. These include maintenance of uniformly high quality by manufacturing to a fixed standard, under conditions of much closer control of tolerances, temperatures, pressures, positioning, and the like than can be achieved by human operators.

On the other hand, it has some limitations which are also important; for example, although it is relatively easy to apply automation to continuous-manufacturing processes, whether flow processes or high-production synchronized assembly lines, it is not nearly so simple to apply it to the intermittent manufacture of products which may be made on a job-lot basis or in which design changes are frequent. For this reason electronic controls have come into widespread use in recent years in continuous-flow petroleum refining and chemical manufacturing, and have recently been successful in certain special-purpose machines like the continuous-transfer machines used for producing engine blocks.

Although we are just beginning to see automatic control of complex assemblies, development in the field of true automation on a broad scale will come more rapidly with the development of automatically controlled general-purpose machines of much greater flexibility. As computers with larger memories are designed, it becomes technologically possible to achieve a truly "automatic factory," but whether this is practical or desirable is a complex problem

*President, Sprague Electric Company.

which must be carefully weighed with a proper consideration of all factors involved.

From a financial standpoint, automation will substitute large capital expenditures for labor costs. This can only be a sound substitution provided a sufficient volume is assured over a long enough period of time to pay for the equipment.

In our industry, for example, there has been a project under way at Stanford Research Institute on the automatic assembly of electronic end equipment. The results of this study so far seem to indicate that the new method would increase capital investment ten times.

Balancing this, labor costs would be cut 90%, and the over-all saving would be 15% on the basis of a five-year amortization of the equipment. This is an important saving, but the capital investment required is obviously not a step to be taken lightly by any company.

Great progress is being made in electronic devices for the office. These comprise electronic computers and data-processing systems which are coming into use at a very rapid rate. Growth in this field is presently so fast that it is very difficult to put a figure on it at all.

COMPUTERS

It is estimated that, in 1954, about \$75 million worth of computers were sold or leased to business and Government, consisting roughly of \$50 million for digital machines and \$25 million for analog computers. This year the figure will at least double, and some estimates are that it will be ten times the present size by 1960.

Again, however, the surface has just been scratched, since probably less than 10% of office paper work has been mechanized to date. That the potential market is almost unlimited is indicated by the fact that, despite the progress made in the use of electromechanical business machines since 1940, the number of clerical workers in industry has increased more than 60% over the same period, according to the Department of Labor.

This multimillion-dollar business in computing machines is already well established in the field of financial and accounting calculations, and for engineering computations and data gathering. Their use for widespread inventory and production control is just starting, and here the potential is enormous.

At the present time, an inventory-control computer is being designed for the Army which will be so large that it will cover the area of a football field. It is expected that this will permit a reduction in military inventory of some \$250 million and permit the shipment of material in one-fifth the time now required. This will mean a saving in which all taxpayers will share.

Similar, but somewhat smaller, machines will soon be used by department stores to control their inventories and to tabulate their accounts automatically, and by manufacturers for inventory and process control. Computers will find many other industrial uses, such as for market research and for routing the flow of automobile and truck traffic in and out of larger cities, just as radar-system computers now control air traffic around our airports; and, because many smaller businesses will not be able to justify the cost of a

computer, you may expect to see *new* businesses offering computers on a rental basis.

Another great field for potential growth is industrial television, which will play an increasingly important part in manufacturing operations, particularly where these are dangerous to personnel, and some forms of these will probably find use in the home.

Impressive though the outlook for industrial electronics is, I think it is important for you as investment analysts to realize that, ten years from now, the largest segment of our industry is still likely to be military electronics. Indeed, I think it is safe to say that a good three quarters of the devices and techniques now being introduced in the control and data-processing fields are direct outgrowths of work done originally in the development of advanced types of airborne-weapons systems and guided missiles, for here is where the concept of rapid, precise control through electronics really had its start, and where the urgency of the problem led to more daring approaches to its solution than would have been tolerated in any industrial operation.

FIGHTER-INTERCEPTOR

Consider, for example, what takes place in a modern fighter-interceptor which travels at such speeds that the control engineering of human beings is entirely inadequate to evaluate the output of each device separately. At these speeds, fire and flight control, identification, and navigation aids must operate as a fully integrated system.

Such systems will guide a plane to an assigned patrol area and search for, locate, and identify a target. When it is time to fire on a target the necessary fire-control equations are solved by an electronic computer, which assesses data on the location of the target and feeds it into the fire-control or missile-directing system.

The same directing system feeds data to the control surfaces to maintain the aircraft on course during the firing run, unless overridden by the pilot. Finally, mission accomplished, other communication and navigational aids will help to get the plane and crew home safely, regardless of weather.

A recent preview of this was seen in the newest planes toward the end of the Korean conflict. In a guided missile, with no crew at all, the problem becomes far more difficult, since the control system must be capable of handling even more data at fantastically higher speeds.

The result of the astonishing engineering and scientific progress made under pressure of necessity has been that electronic procurement for defense has increased from \$500 million in 1950 to more than \$2.5 billion this year. Present indications are that Government orders for electronic equipment in fiscal 1956 will be still larger than those in the current year, and that the amount will continue to rise for a number of years to come, after which, in my opinion, a high level will be maintained indefinitely.

Our increased dependence on electronics in modern warfare can be illustrated by the fact that one modern Air Force bomber today carries 6,000 pounds of complex electronic gear, compared to just 1,600 pounds carried by its counterpart in World War II; and this is true despite substantial miniaturization recently achieved. Doubtless, most

of you also know that the cost of the electronic equipment on the latest planes today approaches one half of the total cost of equipment.

On an over-all basis, it is interesting to note that the budget of the Air Force for fiscal 1955 allots 22% of total funds to electronics, including equipment installed in aircraft when delivered; this represents an increase from 20% in 1954, and it has been estimated that, in 1956, the percentage will increase still further to 26%, owing to the growing complexity of piloted aircraft and accelerated production of guided missiles.

As much as 75% of the cost of some of the newer missiles is associated with electronic control and guidance devices, and the missile program is really just getting under way now. The Air Force alone spent \$339 million on missile procurement in 1954, is spending \$477 million this year, and will spend an estimated \$603 million in 1956. Adding approximately \$200 million for Navy and Army missiles gives us a total of some \$800 million in the coming year, which is nearly double the figure of two years ago.

I could go on and cite to you many other examples of the tremendous growth of electronics in the military area; suffice it to say, however, that, optimistic as I am about the future for industrial electronics, I am equally certain that military equipment will continue to be the major market for electronic-control systems, if we are to maintain the technical superiority that is a *must* for the free world. I am also certain that the many contributions to the electronic art being made by the 12,000 engineers who are at work on electronics in the aircraft and missile industry will ultimately be applied to the solution of many commercial and industrial problems.

Many new functional components are contributing to and affecting the design of present electronic gear of all types. These include the new semiconducting devices, such

as transistors and diodes, and memory devices, such as magnetic tape and ferrite memory rings.

Every facet of the electronic industry is faced with the problems of creating new and better materials, components, and functional assemblies, and of achieving a much higher reliability in their design. As equipment gets more complex, the degree of reliability must increase as an exponential curve, for greater complexity means a greater incidence of use of components, and, unless greater complexity is added by parallel circuits, the failure of a single part can mean the failure of the entire system.

In this connection, recent military experience has shown the cost of maintenance of some electronic apparatus to be twice the original cost per year. I am happy to report that great progress in meeting this challenge is presently being made.

The questions have been frequently asked how rapidly the electronic industry may be expected to grow and what ultimate size it may attain. Stanford Research Institute has recently completed a study in which they have forecast the growth for the next decade at 10% per year. This coincides closely with our own and many other predictions.

This indicates a doubling of the industry in the next seven or eight years. The division at that time perhaps will be as follows:

Radio and TV	\$3 billion annually
Military electronics	3.5
Industrial electronics	2.5
Total	\$9 billion annually

At this volume, it would closely approach the present size of the great automotive industry. It is impossible to predict the eventual size of the electronics industry, for human imagination alone bounds the limits to which electronic devices may be put for better entertainment, greater personal and national safety, and more uniform and lower-cost products—in short, for more leisure and a fuller life.

RADIO CORPORATION OF AMERICA



Dividend Notice

The following dividends have been declared by the Board of Directors:

First Preferred Stock

87½ cents per share on the First Preferred Stock, for the period July 1, 1955 to September 30, 1955, payable October 1, 1955, to stockholders of record at the close of business September 12, 1955.

Common Stock

A quarterly dividend of 25 cents per share on the Common Stock, payable July 25, 1955, to stockholders of record at the close of business June 17, 1955.

ERNEST B. GORIN,
Vice President and Treasurer

New York, N. Y., May 6, 1955



AIRCRAFT RADIO CORPORATION

Boonton, New Jersey

Dividend No. 89

On May 2, 1955, the Directors of Aircraft Radio Corporation declared a dividend of twenty cents (20c) per share on the common stock of the Company, payable May 25, 1955 to stockholders of record at the close of business May 18, 1955.

H. M. KINGSLAND, Secretary

YALE & TOWNE

DECLARES 269th DIVIDEND

75¢ PER SHARE

On May 26, 1955, dividend No. 269 of seventy-five cents (75¢) per share was declared by the Board of Directors out of past earnings, payable on July 1, 1955, to stockholders of record at the close of business June 10, 1955.

F. DUNNING

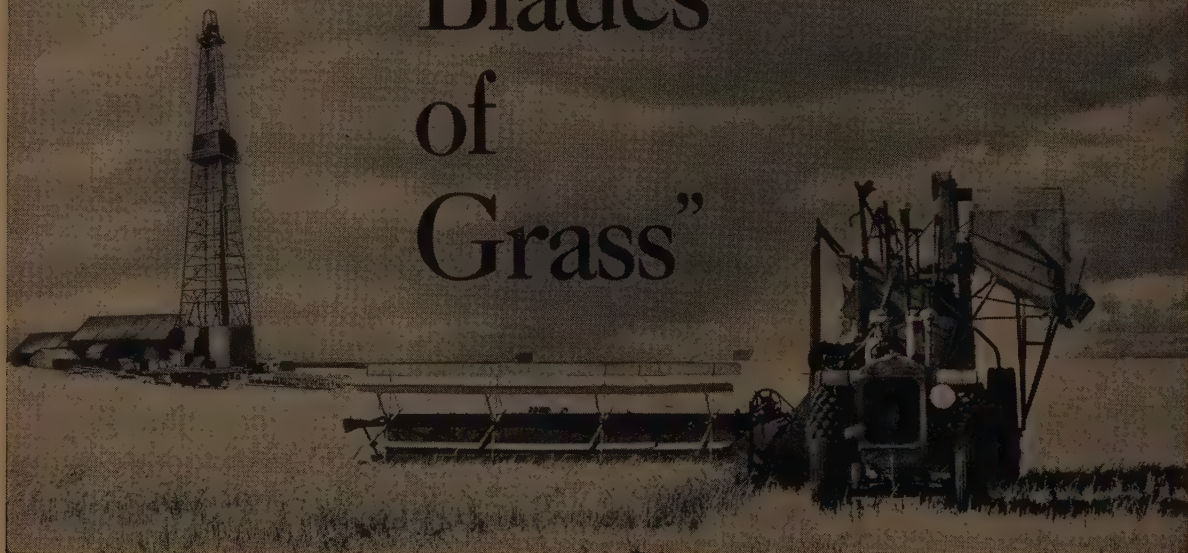
Executive Vice-President and Secretary

THE YALE & TOWNE MFG. CO.

Cash dividends paid in every year since 1899



"Two Blades of Grass"



TWO CENTURIES ago Voltaire said, "He who makes two blades of grass grow in place of one renders a service to the State." The job of Standard Oil Company (New Jersey) and its affiliates is something like that—to produce oil where none was produced before and, by so doing, to create wealth for everybody.

How well have we been doing this job? Our Annual Report for 1954, which has just been sent to the 300,000 shareholders who own Jersey Standard, tells about it.

It tells how wealth was created by extending known oil fields . . . And by discovery of new ones . . . By converting crude oil, itself of little value, into hundreds of useful products . . . By moving petroleum products from where they were made to where they were needed.

All these things helped the people and strengthened the nations where we do business.

Some highlights of these activities, drawn from the Annual Report, are set forth here as a matter of public information.

1. During 1954, the free world used more oil than ever before. And oil is energy, which is basic to the world's progress.

2. To meet these needs, our affiliates produced and refined more oil than ever before in the Company's history. But additions to oil reserves were greater than the oil used.

3. We had vigorous competition everywhere. There is nothing like competition to bring you better products and service.

4. 1954 was our top year in sales, earnings, and dividends paid to owners.

5. During the year, we spent 764 million dollars for new equipment and for exploration. Since World War II, we have spent 5 billion dollars for the means to meet your future oil needs.

6. Research was productive. Our research affiliate obtained more patents on products and processes than any other oil company. In Linden, N. J., the first atomic laboratory in the oil industry is being built to study the uses of radiation in oil refining.

7. Current developments in atomic energy will mean greater availability of electric power: increased mechanization, expanded industry, and greater use of petroleum products. The oil business will gain, and you will have the benefits of both kinds of energy.

8. We played an important part in arranging to return Iran's oil to world markets.

9. A world's safety record for major refineries was set by Esso employees at Baton Rouge, La. . . . 7,911,769 man-hours with no disabling injury. This passed the previous record by more than a million man-hours.

10. We have long supported education through our taxes. We have also felt an obligation to aid privately supported colleges and universities, which are an important source of new employees and of informed citizens. During 1954, we contributed about a million dollars to such institutions.

If you wish a copy of the full Report for 1954, write to Standard Oil Company (New Jersey), Room 1626, 30 Rockefeller Plaza, New York 20, N. Y.

STANDARD OIL COMPANY (NEW JERSEY)
AND AFFILIATED COMPANIES



CHAIRMAN
E. STUART MILES
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VICE CHAIRMAN
A. HAMILTON BOLTON
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MODERATOR
W. STURGIS MACOMBER
Reynolds & Company

Canada's Industries . . .

The Canadian Economy

E. STUART MILES

I WOULD LIKE TO SAY how honored we Canadians are to be invited to participate through the medium of this forum in this, the Eighth Annual Convention of the National Federation of Financial Analysts Societies. I sincerely hope that the result of this afternoon's discussions will be to increase both your interest in and understanding of Canada and her industries.

Before calling on our speakers I would like to review briefly the state of the Canadian economy as a whole in 1954 and its outlook in 1955. In doing so I will try to keep statistics at a minimum.

Canada's gross national product in 1954 amounted to approximately \$24 billion. This was about 2% below 1953 but still about 3% ahead of 1952.

The items into which we break down our gross national product are these (in the general order of their importance):

Wages, salaries & supplementary labor income	50%
Investment income (which comprises corporation profits, interest, net rents, etc.)	15
Indirect taxes (less subsidies)	12
Depreciation allowances & other business write-offs	10
Net farm income	5
Net income of unincorporated businesses (other than farm)	7
Military pay & allowances	1

SHOWED MODERATE INCREASES

The interesting thing to note about these components in 1954 was that four out of the seven showed moderate increases over 1953. Two others, investment income and net income of unincorporated businesses, showed moderate declines of 2% and 3%, respectively, and, in fact, if investment income were grouped with depreciation allowance and other business write-offs, the total of the two would be higher in 1954 than in 1953. This leaves farm income as the only component showing a sizable decline, the reduction being approximately 33% between 1953 and 1954. If farm income were to be excluded from the national accounts, Canada's gross national product would

have been up moderately in 1954 compared with that of 1953.

Now let us look at the expenditure pattern in Canada. As you know, the sum total of gross national expenditures is equal to the gross national product, and it is, of course, the net increase or decrease of these expenditures that accounts for the increase or decrease in the GNP.

In our accounting system we break down gross national expenditures as follows (in the general order of their importance):

Personal expenditure on consumer goods & services	65%
Government expenditures on goods & services	18
Investment in new machinery & equipment	7
New nonresidential construction	7
New residential construction	5
Inventory changes (plus or minus)	— 1
Net export or imports (plus or minus)	— 1

In 1954, three of these seven components showed declines, one remained virtually unchanged, and three showed increases. The depressing items were expenditures on new machinery and equipment, off 17%; expenditures on new nonresidential construction, off 2%; together with a net liquidation of the country's inventories of \$230 million, compared with a net accumulation of \$605 million in 1953. In passing, it should be noted that about one half of this turn-around in the inventory picture took place in farm inventories, and the other half in business inventories.

BUSINESS INVENTORY LIQUIDATION

The business inventory liquidation was almost entirely at the manufacturing level and principally in the machinery, electrical goods, and textile industries. It is also interesting to note that by the fourth quarter of 1954 inventories appeared to be in a net accumulation phase once again.

The expenditure item that remained virtually unchanged between 1953 and 1954 was Government expenditure on goods and services.

Buoyant factors in the expenditure picture last year were, first, a slightly improved net trading deficit with other

Outlook for the Oil Industry

J. R. WHITE*

IN DISCUSSING THE CANADIAN crude-oil situation with security analysts today, I feel completely at home. We who make our living in the oil industry are essentially investment men. The investment per employee is considerably higher in the petroleum industry than in other trades.

Nor is there, I believe, any other industry where day-to-day operations are more concerned with investment decisions. Our industry is constantly realigning its capital investment to fit with changing sources of crude on the one hand and changing patterns of demand on the other.

As investment men, we tend to find statistics a good deal more eloquent than oratory, and it has been with this in mind that we have compressed a great deal of the story on Canadian oil into the booklets which have been presented to you. In them you will find material with which to build your own estimates of past and future rates of growth.

MORE RATIONAL RATE OF GROWTH

I think most of you will come to the conclusion that the violent expansion of the early postwar years has given way to a more rational rate of growth. This is not surprising, since, in the earlier years, we not only had to make good the wartime arrears of normal development, but we also had to catch up with rather drastic technological changes, develop and equip an entirely new producing industry, and

*President, Imperial Oil, Ltd.

(Concluded from preceding page)

countries, and, second, new residential construction, which increased about 9% and, because of its magnitude, most important, personal expenditure on consumer goods and services, which rose approximately 3%.

One or two more figures for 1954. Personal savings amounted to \$1,137 million, compared with \$1,539 million the year before. As a percentage of personal disposable income (which is the total income of all individuals before direct taxes), these personal savings declined from 9.2% in 1953 to 6.8% in 1954.

In other words, one of the strong underlying factors in maintaining a high level of business activity in Canada last year was the combination of larger personal disposable income and a higher ratio of spending to saving. Consumer debt also rose 5½% during the year to an estimated year-end total of \$1,963 million.

Now for a brief look at what is expected in 1955. Personal income is expected to increase about 2½%, reflecting particularly further increases in wages and salaries, and some improvement in farm income. Corporate profits are expected to gain in 1955.

keep supplies abreast of the violently accelerating postwar demand into the bargain.

For the next five years, our forecasts indicate an increase in consumer demands in Canada of some 200,000 barrels daily. That is, each year should see growth about equivalent to a new refinery, together with all the necessary facilities for marketing its products.

The ending of the skyrocket phase still leaves the Canadian oil industry growing at a very healthy pace. Last year, Canadian oil producers supplied 56% of the country's refinery requirements. This compared with 46% of the smaller requirements of 1953.

Imports of crude were displaced from British Columbia on the Canadian West Coast, while the extension of the Trans Mountain pipe line enabled Canadian crude to supply a new export market in the Puget Sound area. Further extension of the export market is on the way, with the construction of another refinery at Anacortes, Wash., while at Minneapolis a large refinery is being built to handle Saskatchewan crude, supplied through the Interprovincial pipe line for the most part.

Whether or not these additional market outlets will enable Canadian crude to show the approximately 20% increase in production that was registered last year is perhaps academic. The important factor is that facilities have been provided that bring Canadian crude in touch with some of the largest consuming areas in the world, while in terms of price it is competitive with all other sources of supply.

A new high in residential construction is in prospect, while new nonresidential construction is expected to be up moderately. A further slight decline is looked for in expenditures on machinery and equipment.

Government expenditures are expected to be higher. A slight improvement in our trade deficit appears probable. A net accumulation of inventories would appear likely. As a result, it is estimated that Canada's gross national product this year will be in the order of \$25 billion—up about 4% from last year, and nearly 2½% greater than the previous high in 1953.

Now for our speakers. Collectively, they represent one of the basic strengths of the Canadian economy—our natural resources. There are many statistics that could be quoted to indicate the relative importance of the pulp and paper, mining, and petroleum industries to our country. Perhaps their significance to a group of financial analysts can best be appreciated by the fact that the companies in these three industries in recent years have accounted for approximately 40% of the total net profit of all Canadian corporations.

Table 1

Comparable Crudes	Gravity, Degrees	Price per Bbl, U.S. Dollars
California - Greeley	37	3.24
Mid Continent	36	2.82
Texas - East	39	2.90
West	36	2.69
Venezuela Oficina*	36	2.88
Illinois	36	2.90
Redwater	35	2.53

*FOB Puerto La Cruz.

It is safe to say, I believe, that more fingers have been burnt because individuals and corporations have overestimated the value or the quantity of crude reservoirs in the ground than from any other source.

THREE BASIC INFLUENCES

There are three basic influences on the value of crude, two of which are comparatively easy to evaluate. These two are the effects of accessibility to markets and the inherent qualities of the crude itself. These two factors determine the wellhead price of crude currently being offered for sale.

Much less easy to measure is the third factor—the speed with which crude in the ground can be produced. Everyone is familiar with the fact that a dollar invested today will bring back several dollars of pension twenty or thirty years hence. That is, everyone realizes that a dollar payable twenty years hence may only be worth half a dollar today. In the same way, a barrel of oil produced and on its way to market can be worth several barrels of oil still in the ground.

Let me deal with each of these influences as they affect Canadian crude. First, the effect of distance from markets. If we take a representative Canadian crude such as Redwater, we find that its wellhead value compares as shown in Table 1 with similar crudes from other points.

Redwater crude sells at a discount below the price of similar crudes in other parts of the hemisphere. This discount reflects the fact that western crude has to sell low enough to meet the heavy transport cost to carry it to its key market in southwestern Ontario. The distance from the field to the Sarnia, Ontario, refining center is some 1,700 miles, and, even though this distance is traversed by means of highly efficient large-diameter pipe lines, the tariff remains a heavier freight penalty than has to be borne by similar crudes from other parts of the continent.

THE BASIC PROBLEM

The basic problem here is that overland transport costs, even by large-scale pipe line, are about three times as high per barrel-mile as large tanker rates. The fact that such a geographic handicap exists intensifies the importance of good planning in other directions.

Within any major producing area itself, there are also wide differentials in the prices of crudes of varying quality and accessibility. Table 2 illustrates the wide gap between high-gravity accessible crude and that which is of low gravity or inaccessible. Additional factors such as the con-

tent of sulfur and other impurities are also reflected in the price schedule.

The variation revealed in this range of prices is something with which you may already be familiar. Broadly speaking, the quality factor reflects the difficulty of refining heavy and sour crudes into gasoline and other light marketable products. It is worth noting that recent research has developed new processes for handling this type of crude, and that further development along this line may ultimately tend to close the gap a little between the light and heavy grades of crude.

These factors of grade and accessibility, important though they are, are already recorded in wellhead prices for crude, and as such call for comparatively little guesswork on the part of the investor. The third factor, the rapidity with which the oil can be produced, is one that leaves the greatest room for individual judgment, and where the room for error is correspondingly wide.

To illustrate, let us start with a list of the rates of withdrawal as authorized by the Alberta Conservation Board (Table 3).

PRODUCED AT VARYING SPEEDS

These figures mean that oil reserves will be produced at varying rates of speed ranging from less than ten years to around seventy. The average rate of withdrawal is just under 4% per year, which means that the average for the area—at the moment—would be a withdrawal period of twenty-five years.

The significance of the differences in allowable production, and hence in the term, will be quickly apparent to anyone who has given much thought to the workings of annuities. For example, at a 5% interest rate, the cash value of a ten-year annuity is equivalent to 77 cents on the dollar of total payments.

Spread the same amount of money over a seventy-year period, and its cash value drops to 28 cents on the dollar of payments. That is, stretching the time over which the

Table 2

Crude Oil	Gravity, Degrees	Price per Bbl at Wellhead*
<u>Alberta</u>		
Leduc	39	2.60
Sturgeon Lake	38	1.97†
Stettler	27	1.97
Redwater	35	2.49
Golden Spike	37	2.54
Pembina	39	2.48
Turner Valley	(40)	2.805
Lloydminster	15	1.46*
<u>Saskatchewan</u>		
Coleville	14	1.50
Smiley	33	2.24
<u>Manitoba</u>		
Daly	33	2.34
Viriden	34	2.32

*Canadian dollars.

†FOB tankcars.

‡Delivered at refinery.

sum is to be received has reduced its value by two thirds.

This is a principle that everyone who has bought goods on time is aware of. Lengthen the repayment period, and you cut the size of weekly payments. By similar reasoning, if the period over which an oil field is to be produced is stretched out, the present value of crude in the reservoir is correspondingly reduced.

Wider appreciation of the way in which this principle works would clear up a good many misunderstandings about the oil industry. It would, for example, clear up the old myth that exists about shutting in production to add to value.

Shutting in production is just another way of saying that the period over which an oil reservoir is to be produced is to be lengthened. And, since lengthening that withdrawal process automatically reduces the rate of return on investment to the producer, it is clear that curtailment of production has virtually the same effect as cutting prices. One process reduces the value of an oil field just as surely as the other. The way in which these considerations were translated into dollars and cents by the oil industry last year worked out in actual successful bids to a range of 25 cents to 75 cents per barrel for crude, whose spot price was in the neighborhood of \$2.50 per barrel.

The mention of a range of from 25 cents to 75 cents a barrel might lead one to think that those who bought 25-cent oil got a bargain, while those that paid 75 cents were paying an excessively high price. But, when the proper allowance is made for difference in development and production costs, difference in the allotted rate of withdrawal, and differences in gathering costs, it might prove that the 75-cent oil was a more remunerative buy than the 25-cent oil.

MOST COMMON ERROR OF JUDGMENT

For example, perhaps the most common error of judgment that occurs in the producing oil industry is to mistake the volume of crude that a reservoir contains. It could easily develop that, when wider knowledge of the reservoir is gained, the apparent cost of the crude was very different from what the successful bidder believed at the time of the auction.

In other words, like all general yardsticks, this one has

to be used with a great deal of care. Yet it is apparent that, if 10 to 30% of face value represents the top price that professional oil developers are willing to pay for crude oil in the ground, the general investor should be extremely cautious about putting any higher valuation on crude reserves. This is, of course, entirely apart from the valuation that should be put on a going company's organization, facilities and know-how.

LOWER-THAN-CEILING PRICES

Actually, of course, active oil companies must get a fair portion of their crude at considerably lower-than-ceiling prices. It is only by earning an adequate margin that they are enabled to invest in the search for oil—an occupation which, as you all know, involves tremendous risks and expenditures. Every year, at least \$50 million is lost in dry holes alone by the oil industry in western Canada. If these dry wells were not compensated for, it is obvious that the search would have to come to a halt.

It is, I think, in everybody's interest that the investor should be able to make a reasonably accurate appraisal of crude values and be governed accordingly. If he cannot make an accurate appraisal, then there arises the danger of the boom-and-bust pattern developing, with its usual harmful effects on the investor, the industry, and the area in which they operate. Avoidance of extremes of over- and undervaluation for investment purposes will, I believe, contribute greatly to economic stability.

Perspective on crude values, too, is essential to framing public policies. So much romantic fiction has been based on the theme of "black gold" that it is easy for investors, electors, and governments to gain an erroneous concept of the oil industry, which is essentially a necessary but not too glamorous business operating on large volume and low-profit margins to satisfy mass demands. Failure to recognize such points has occasionally resulted in legislation that has put a prompt end to exploration.

As I mentioned earlier, we believe that the growth picture in western Canadian oil is emerging from the "sky-rocket" phase. To the speculator, this may seem a somewhat disappointing conclusion, but I should think that, from the point of view of the investor, it should carry most satisfactory implications.

HAS ACHIEVED MATURITY

Although our industry is still very young and has a great deal ahead of it, it has achieved maturity in a great number of directions. We know enough about our geology to eliminate some of the more serious uncertainties which we faced a few short years ago.

We know a great deal more about our economics—about the place where Canadian oil will fit into the world oil price and supply structure. We have licked some of our most difficult problems of engineering in equipping the new industry with transportation, refining, and marketing facilities.

We have, I believe, become an integral part of the Canadian economic and social scheme. I do not think it is unduly optimistic to describe the Canadian industry as one of which it might be said, simultaneously, that it has arrived—and is still going places!

Table 3

Field	Ratio, Annual Production to Ultimate Reserves*
Redwater	3.6%
Leduc D-2	12.1
Leduc D-3	7.3
Bonnie Glen	2.3
Fenn Big Valley D-2	4.7
Joarcam	10.3
Wizard Lake	1.9
Acheson	3.8
Golden Spike	1.4
Westerose	1.6
Average	3.75%*

*January 1, 1955.

*Weighted according to reserves.

Investment Trends in Canada

A. HAMILTON BOLTON

ALTHOUGH THIS FORUM has been called "Outlook for Canadian Industry" and our panel of speakers includes some of the top executive talent in industry, I think I am right in believing that our audience is interested primarily in the investment aspects of that outlook. What American investors are interested in is undoubtedly the factors affecting investment opportunities for them in Canadian securities. Mr. Miles has given you a run-down of the over-all economy. Before introducing our speaker, Mr. Hobart, I would like to point out certain factors that may have an important bearing on investment trends in Canada.

EXCHANGE RATES

One of Canada's prime problems is the exchange rate with the U. S. dollar. We are all familiar with the fact that, primarily due to an influx of U. S. capital into Canada, the Canadian dollar is currently at a premium and has been at a premium for a long number of months over the U. S. dollar.

If you think Canadians particularly enjoy having the Canadian dollar at a premium, then I am sure Mr. Hobart for one will disillusion you in short order. Obviously, it acts as an invisible tariff against Canadian exports, or in some cases as an extra hidden cost of operation.

However, what I want to point out is that there has been a conscious effort recently on the part of the Government by way of Bank of Canada policy to get that premium down. Please keep in mind that, because of the influx and efflux of U. S. capital, particularly in the bond market, the Bank of Canada, despite a much tighter banking setup of 10 chartered banks against some 14,000 banks in the United States, does not have the complete control of the market.

THREE FACTORS

In recent months three factors have aided the Bank in its attempt to get the Canadian dollar down: (1) general recessionary tendencies in 1954 in Canada as in the United States but about 6 months later and lasting longer, (2) the revision of the Bank Act in 1954, whereby minimum reserves were reduced from a traditional 10% (that is, 10% of total Canadian deposits must be kept either in cash in the till or in cash balances on deposit with the Bank of Canada), thus releasing reserves sufficient to allow for a deposit expansion of some 20%, and (3) the raising of new bank capital by the chartered banks for the first time in twenty-five years, which also enables a possible deposit and bank-credit expansion in the same leverage ratio of 12 to 1.

Because it has been expedient to follow an easy money policy, and because of the large reserves of bank capital available for the reasons given, it has been possible for the Bank to make the Canadian bond market so unattractive for U. S. investors that they have been sellers of

Canadian Governments on balance, and, since a seller of Canadian bonds is also a seller of Canadian dollars, the rate has dropped from $3\frac{1}{2}\%$ premium to under a 2% premium. Canadian Government bond yields are now in certain cases practically on the same yield basis as U. S. ones. For instance, U. S. Treasury $2\frac{3}{4}\%$, 1963-68, yield around 2.75% whereas Canada $2\frac{3}{4}\%$, 1967-68, sell around a 2.85% basis.

THE YIELD DIFFERENCE

Traditionally the yield difference is 50 basis points, not 10 or 15, and in 1952 and 1953 the yield spread almost reached 100 basis points, or 1%. With the premium of 2% say, obviously American investors are sellers on balance, and this is clearly indicated by nonbank holdings of marketable Canada's dropping from \$7.6 billion a year ago to about \$6.4 billion now, with the banking system absorbing about \$800 million.

TWO POINTS

I want here to make only two points. First, because of an extremely favorable conjuncture which will not happen again, that is, new bank capital, plus reduced bank reserve requirements, plus a business readjustment starting later and lingering longer than in the United States, the Bank of Canada has been able to follow an easy-money policy, which is potentially highly inflationary, at a time when money elsewhere (United States, United Kingdom, and so on) has been getting tighter.

Despite this extraordinary conjuncture, the net result has been to reduce the premium from $3\frac{1}{2}\%$ to only $1\frac{1}{2}$ to 2%. Bank reserves, however, are now at 8.6% of deposits versus 8.0% minimum and 10.0% last year, so that there are obvious limits.

I frankly do not think we are likely *by these means* to accomplish what my industrial friends would fervently like, to reduce the dollar premium to zero, or, perhaps better, to a discount; unless of course the recession takes on a much more ominous turn than appears likely at present. And one reason for not expecting such a happening is the recent expansion in commercial loans, which, after falling behind 1953 in 1954, have now in 1955 surpassed 1954 figures.

UNEMPLOYMENT

This then is our number one dilemma which no doubt Mr. Hobart and Mr. Bradfield will touch in their respective fields. Problem number two is perhaps unemployment.

There is no doubt that unemployment in Canada is the largest in postwar history at the present time. However, I am inclined to view this not as a catastrophe but rather as a normal occurrence after a number of years of substandard unemployment, if I may use the term.

According to the latest figures I have, there were, at the

Outlook for Newsprint

G. M. HOBART*

MY FUNCTION TODAY, I assume, is to help your members assess the future of the Canadian newsprint industry. The best way to begin, I believe, is to lay before you certain facts, both of yesterday and today, about the financial, market, and growth positions of my industry.

Perhaps the most important fact is that half the world's newsprint supply comes from Canada, and half the world's supply is consumed in the United States. Consequently, the future of the newsprint industry in Canada depends very largely on events in the United States, where the domestic mills provide only 20% of the supply, with almost all the remainder coming from Canadian mills. These mills have had varying fortunes.

Not so long ago, one could buy Canadian paper stocks for a song. In 1946, for instance, leading issues were selling at around four to seven times earnings. This was well below the average of most industrials at that time, despite the fact that industry prices and profits were rising, paper and pulp were in short supply, and the general business climate was very healthy.

THE POSITION TODAY

Contrast that with the position today. Since early in September 1953, according to our Dominion Bureau of Statistics index, industrial stocks as a whole have risen by about 38%, but the DES index of paper stocks has increased by nearly 74%.

Whereas, even eight or ten years ago, Canadian pulp and paper stocks were regarded by many investors as a very risky proposition, they are seen today in the very best of company, in the portfolios of the most conservative institutional investors. They sell now in the more respectable range of about 12 to 15 times earnings, while yields have in most cases fallen to below 5% and in some to under 4%.

Why is this so? There are several reasons. World demand for newsprint, of which Canada now supplies about

15%, is growing, steadily and fast. Despite the bankruptcies of producers in the 1930's, following a rash of overexpansion, newsprint has been shown time and again to be a commodity for which demand is remarkably stable. Our industry is stronger financially than ever before. Its potential for low-cost expansion is still very large. Its timberlands will support a much bigger drain. Its scientists every year are discovering new, better methods of production.

PRODUCTION AND EARNINGS

Lumped together, these factors spell two things: steadily rising production, and steadily rising earnings. And, although much of these higher profits will undoubtedly be reinvested by the mills in new and better facilities, shareholders will benefit through larger dividends on their investments.

The postwar production and stability record of newsprint mills can be summed up with one point. From September 1946 to the present time encompasses over eight and a half years; and, during those 103 months, Canadian mills operated below rated capacity in only 20 months. In 10 of the 20, production was above 99%, and low point for the whole period was 96.9%.

RAISED ITS NEWSPRINT CAPACITY

That would perhaps not be particularly impressive if capacity had stayed still or increased very little; in other words, if Canada's biggest business had been happy to sit back and reap the harvest of the boom without risking money on expansion. But from the end of 1946 to the end of 1954, Canada raised its newsprint capacity by almost 30%. In amount, this increase alone totaled over 1,300,000 tons, which is more than the total 1954 production of the world's second largest producer—the United States.

The postwar demand pattern is interesting, both in itself and because it helps to explain our present position. Right after 1945, our shipments overseas rose sharply, back

*President, Consolidated Paper Corporation.

(Concluded from preceding page)

end of February, 379,000 without jobs and seeking work, or about 6.8% of the civilian labor force. This compares with 6.0% in February 1954, which with March was the peak unemployment month in Canada last year, and with 3.3% in 1953. Thus it is evident that, although a turn has not yet been established, yet the unemployment is not showing any tendency to snowball.

Of perhaps as much significance as the unemployed figures are: (a) In nonagricultural work there were, in February, 3,827,000 people at work 35 hours per week or more, as against 3,781,000 the year before, an actual improvement, and that the total of agricultural and nonagri-

cultural persons working 35 hours or more was 4,485,000 million, as against 4,489,000 a year ago, indicating a negligible change. (b) Total labor income in dollars has been increasing regularly since March 1954, and at the year end was about 9% ahead of that month and a good 4% ahead of December 1953.

Similarly, average hourly earnings have been climbing consistently. Thus, I view the unemployment figures as a normal result of a slight recession in Canadian business last year which, because the forward impetus has been so great in prior postwar years, tends to be given headline status for little good reason.

up to prewar levels. At the same time, the North American economy got its tremendous expansion program rolling.

If both markets had then grown rapidly, we would have had a very difficult problem trying to parcel out production. Even as it was, we raised annual capacity by 650,000 tons between 1946 and 1950, and still black and grey markets grew up.

However, serious dollar problems began appearing overseas in 1948, and, by 1950, our shipments to that market—which had been taking about 15% of our total output—had dropped by two thirds. Later, they started rising again.

U. S. PATTERN

In the United States, which today accounts for 82% of our sales, the pattern was just the opposite. Demand there climbed sharply right through 1950, but then, as overseas business started picking up, the rate of increase in the United States began slowing down.

Last year, the pattern which started in 1950 was repeated: a small increase in American business of 14,000 tons, along with a very much bigger gain in overseas markets of 200,000 tons, as exchange controls were further relaxed. This enabled our industry to sail through 1954 with scarcely a side glance at the minor recession that was going on.

This brings us up to date. It also appears to bring us to the end of one phase in the postwar newsprint business, and the start of still another. Because this year, while overseas shipments rose by 68.5% in the first quarter, U. S. consumption seems to have resumed the really sharp upward surge which ended temporarily in 1950. In March and April, U. S. demand was nearly 10% higher than it was a year ago, and, although this pace may not be held throughout 1955, the total for the year should be considerably above 1954.

Thus there seems every likelihood that Canadian newsprint machines will operate at top capacity throughout 1955. For the first quarter, they averaged 101.8%. Earnings of the industry should therefore be good this year, probably slightly higher than in 1954. Wage rates are still rising, but are offset by the Canadian corporation tax rate which has been cut 2%.

While the immediate outlook is excellent, is there any chance that the mistakes of the 1920's will be repeated? Are we overexpanding?

To answer this, we must first add up the amount of expansion underway. In North America, probably some 1,350,000 tons of additional annual capacity will be coming into operation in 1955-58. Overseas figures are harder to calculate, since plans are often announced and never materialize, but outside North America, on the basis of apparently firm plans, over 550,000 tons seem to be expected for installation by 1958.

That makes a total of some 1.9 million tons over a period of four years, or some 475,000 tons average per year. World newsprint capacity at the end of 1954 was estimated at around 12.2 million tons; so this would be an increase of some 15%.

We must look now at demand. From 1947 to 1954, world newsprint production increased by some 4.0 million tons, or some 582,000 tons a year.

The figures for 1955-58 should not be taken as anything but rough estimates, since plans may be changed between now and then, or further additions may be announced. But they do illustrate that, although the expansion underway is very substantial, it does not appear out of line with past growth in demand.

And newsprint demand will continue to grow, for modern mass distribution would be impossible without the markets provided by the daily newspaper. There is no advertising medium to compare with it. It is cheaper than any other. It reaches more people. Advertisers spend much more in newspapers than in any other medium.

No other advertising medium can replace it. Billboards, magazines, radio and TV all supplement, but do not replace newspaper advertising, particularly the classified and local advertising that makes up two thirds of the advertising in the dailies. The kind of economy we have in North America could not continue without the advertising in the newspapers.

TREMENDOUS UPSURGE IN CONSUMPTION

Admittedly, the 1947-54 period included a tremendous upsurge in consumption in the United States, which may not be equaled in size over the next few years. But newsprint consumption outside North America is now rising extremely quickly, with most of the postwar reconstruction completed and with underdeveloped countries increasing their standards of living and literacy.

Therefore, there does not seem to be danger of over-expansion in newsprint at the present time. Instead, world newsprint needs continue to increase steadily and rapidly, and Canadian companies will be able to raise their capacity far above present levels, or the expected levels for 1958, in the long-term future.

Canadian mills, however, may, over the long haul, face more competition in some markets from other producers—certainly, in the United States, from newsprint produced from southern pine and northern hardwood.

Most of the Canadian newsprint companies are conservative in their financial policies. There has been comparatively little new financing undertaken in recent years, and expansion has been paid for largely out of earnings. The result is that today mills have greatly enlarged up-to-date production facilities, and are still in excellent financial shape.

Taking seven large newsprint producers, for instance, we find that their total long-term debt amounted to over \$200 million fifteen years ago. It has now been whittled down to around \$70 million, while expansion has kept step with demand.

This has been possible partly because Canadian newsprint producers have been able to expand their capacity enormously through improvements to existing equipment. These improvements, which have permitted steadily higher machine speeds, have been installed at a fraction of the cost of putting up new mills, and have helped offset repeated increases in wage and transportation costs.

Since the end of World War II, only four new newsprint machines have been installed in Canada. Plans for three others have been announced in recent months, but by far the biggest part of the 1.3-million-ton increase in capacity since 1946 (over one million tons) has come from getting more paper out of existing equipment.

In few other industries have the possibilities for low-cost expansion in this way been so well utilized. It costs about \$100,000 per daily ton of capacity to build a new newsprint mill today, but in Canada some additions to capacity through speedups are running to only a third of that figure.

This process can still go much further. A survey made several years ago estimated the potential increase in capacity from existing Canadian equipment at around 1.5 million tons.

Of that, probably about 1 million is still to be utilized. And the potential has been increased since then by several hundred thousand tons, through development of a device called the vacuum pickup, which again permits still higher speeds. Another important point about this method of expansion is that it is flexible: Plans can be revised upward or downward much more easily than with new mill building.

Besides the strong financial position, and the potential for further expansion, another factor adds strength to our long-term competitive position. This is the research money—millions each year, now going into newsprint industry development.

For some years following the great depression of the late 1920's, most companies simply could not afford to spend much on research, but the prosperous postwar years have meant that producers could channel more of their earnings into this field. Today, many companies have newly founded research departments, as well as sharing the cost of investigations carried on at the Pulp and Paper Research Institute of Canada.

We are examining virtually every aspect of the production cycle. So far, most of the money has gone into research at the mill level, and we have discovered how to

make the newsprint machines run more efficiently, how to get more pulp from a cord of wood, how to use some of the host of chemical by-products of the pulping process.

Attention has also been focused on woodlands, where there is a great potential. We are finding how to grow trees better; how to use different varieties, in some cases located closer to the mills; how to get the logs cut and out of the woods more efficiently through use of mechanized equipment.

Perhaps a thumbnail description of the industry would round out these remarks and bring things into focus. The fundamental soundness of the Canadian newsprint industry is, first, that it is based on the fortunate trinity of plenty of trees, plenty of cheap hydroelectric power, and free access to the world's largest newsprint market, and, second, that trees and power are renewing, not wasting, resources.

Today, the Canadian newsprint industry consists of 39 mills, housing about 140 newsprint machines, concentrated mainly in Quebec and Ontario but established also in the Maritime Provinces, Newfoundland, and British Columbia. In total, these mills can produce some 20,000 tons of paper a day, and some 6.1 million tons a year. That is nearly half the total world capacity. Most of the mills also produce pulp for sale on the open market, and many of the newsprint companies are highly integrated, manufacturing such things as paperboard, specialty papers, and lumber.

Most of the production is planned by companies already in the business, using their own money. They are in the happy position of being able to slow up, stop, or speed expansion at will, depending on their judgment of market prospects. And planned expansion is not out of line with the expected increased consumption in markets here and overseas.

The long-term outlook, then, I believe, is good. The expansion in view, indeed, may be inadequate for the needs of a world that is struggling to industrialize itself as rapidly as possible. But, whatever comes, the financial structure of the newsprint companies generally in Canada today is such that they can ride out any foreseeable fluctuations in demand.

Avisco

AMERICAN VISCOSE CORPORATION

Dividend Notice

Directors of the American Viscose Corporation at their regular meeting on April 6, 1955, declared dividends of one dollar and twenty-five cents (\$1.25) per share on the five percent (5%) cumulative preferred stock and fifty cents (50c) per share on the common stock, both payable on May 2, 1955, to shareholders of record at the close of business on April 18, 1955.

WILLIAM H. BROWN
Secretary

Harbison-Walker Refractories Company

Pittsburgh

Pennsylvania

April 28, 1955

Board of Directors has declared for quarter ending June 30, 1955 DIVIDEND of ONE and ONE-HALF (1½%) PER CENT or \$1.50 per share on PREFERRED STOCK, payable July 20, 1955 to shareholders of record July 6, 1955.

Also declared a DIVIDEND of FIFTY CENTS per share on COMMON STOCK, payable June 1, 1955 to shareholders of record May 10, 1955.

G. F. CRONMILLER, JR.
Vice President and Secretary

Manufacturers of



Wall &
Floor
Tile

AMERICAN ENCAUSTIC TILING COMPANY, INC.

COMMON STOCK DIVIDEND

Declared April 20, 1955

15 cents per share

Payable May 27, 1955

Record Date May 12, 1955

America's OLDEST Name in Tile

Outlook for Canada's Mining Industry

JOHN R. BRADFIELD *

THE ECONOMIC OUTLOOK for the mining industry in Canada is very bright. Since World War II, the dollar value of our mineral production has tripled. Although the spectacular advances in oil and natural gas are responsible for a large share of the total, which now runs a little short of \$1½ billion per year, metal production has made steady and remarkable progress; in fact, we are experiencing in the Canadian mining industry a period of expanding vigor more extensive and varied than at any previous time in our history.

Canada has long been a major producer of nickel, copper, gold, lead, zinc, silver, cobalt, selenium, the platinum metals, aluminum, and asbestos. The range of our mineral resources has now broadened to include iron ore, uranium, lithium, titanium, and columbium, which have become metals of strategic importance in this new age of electronics, jet propulsion, and atomic power.

These new discoveries and developments are widespread across our vast country, which is equal in area to the United States. Transportation and climate, of course, impose restrictions in the North, so that the grade of ore in remote areas has to be high to overcome the economic disadvantages; consequently the mining frontier lies far south of our territorial limits.

A STEADY FORWARD MARCH

People have referred to the "mining boom" in Canada. I prefer to regard the present situation as a steady forward march developing new dimensions of the mineral sources with which Canada is so fortunately blessed. In the hands of capable technical management, with stability of Government policy and highly favorable incentive tax legislation, I believe Canada's mineral resources will be steadily developed on an increasing scale to the benefit of not only our own country but of the United States and the western world in general.

This progress in the discovery of ore deposits has been speeded up by the use of new geophysical techniques of detection. Important orebodies have been discovered by the use of airborne electronic detection methods, and aerial transportation has greatly facilitated exploration in developing Canada in depth.

ASBESTOS

Asbestos is our most important mineral in nonmetallic mineral production. In fact, Canada is the world's largest asbestos producer. The Eastern Townships of Quebec supply approximately 70% of the world's requirements.

The coming into production of two additional mines in this area last year should maintain this position. Canada's 1954 asbestos production amounted to almost a million tons.

Five years ago, the Canadian Johns-Manville Company

started a new asbestos-mining operation in Ontario near the Porcupine Gold Camp. Cassiar Asbestos Corporation, which came into production in northern British Columbia last summer, has a large deposit of high-quality asbestos and is destined to be an important producer.

NICKEL

We have had a steady increase in the value of *nickel* production, which currently accounts for about 85% of the world's supply. This largely comes from the famous Sudbury Basin. The great International Nickel Company has been the world's leading producer for years and has tremendous ore reserves which assure its position for years to come.

Falconbridge Nickel Mines, in the same area, has opened new orebodies and is expanding its production. Last year Sherritt Gordon Mines started producing in northern Manitoba.

The nickel concentrate is shipped to Edmonton and treated by a new leaching process which utilizes natural gas, ammonium sulfate being an important by-product. All three nickel mines produce copper as a by-product. International Nickel is, in fact, our largest copper producer and has smelting and refining facilities close at hand.

Falconbridge has smelting facilities at the mine but ships its nickel to its plant in Norway for refining. Sherritt Gordon ships its copper concentrate from the mine to our smelter at Noranda, after which it is refined by Canadian Copper Refiners at Montreal, a subsidiary of Noranda.

COPPER

We have had a substantial increase in the value of *copper* production. Current production is about 330,000 tons per year, or 40 pounds per person, compared to U. S. production of about 860,000 tons, or 10½ pounds per person. Our copper output is due for a substantial increase.

In the Chibougamau area of Quebec, Opemiska Copper completed its first full year of production in 1954, and Campbell Chibougamau is scheduled to start now as soon as hydroelectric power becomes available in the district. A railroad will be available next year to bring the copper concentrate from this area to the Noranda smelter. Chibougamau Explorers is a copper-gold mine scheduled for early production.

Noranda's subsidiary, Gaspé Copper Mines, is scheduled to come into production this summer when hydroelectric power becomes available. Some \$45 million has been spent on this development which includes a smelter. Gaspé Copper, with over 67 million tons of ore, promises to give a great impetus to this undeveloped section of Quebec.

In about two years' time, Geco Mines Limited should come into production. It is a copper-zinc mine located in a new area north of Lake Superior. It is managed and controlled by Mining Corporation of Canada which, directly

*Vice-president, Noranda Mines, Ltd.

and indirectly, is virtually controlled by Noranda. There are other important copper prospects being developed, such as Granby Copper Company's new Granduc mine in northern British Columbia.

Hudson Bay Mining and Smelting Company in Manitoba is the second largest copper producer in Canada with a smelter at the mine. Its metal is refined at Canadian Copper Refiners in Montreal.

Noranda's Horne Mine is the third largest producer, and Noranda's custom smelter treats copper concentrate from mines such as Quemont Mining Corporation, Waite Amulet Mines, Normetal Mining Corporation, East Sullivan Mines, Quebec Copper, and Opemiska Copper and Sherritt Gordon which I have already mentioned. This copper is all refined at Canadian Copper Refiners in Montreal, which ranks with the three largest copper refineries in the world and produces more gold and selenium than any other refinery.

GOLD

As one might surmise, there has been little change in the value of gold production, due to the fixed price of the metal. The principal source of gold is from the numerous producers in the Porcupine, Kirkland Lake, and Larder Lake camps in Ontario, and the mines in northwestern Quebec.

Kerr-Addison Gold Mines is the largest gold producer and is indirectly controlled by Noranda. The marginal gold mines have had a very difficult time, owing to increases in costs, although they have made tremendous improvements in efficiency.

As you are aware, there has been no increase in the price of gold since 1934. Our Government has, for the past seven years, been assisting the gold mines, in order to encourage them to remain in operation. I would like to think that, in extending this assistance to the end of 1956, they consider there is a possibility that the price of gold may be adjusted more in line with the inflation that has occurred during the period.

I believe that the day will come when gold, as the monetary metal that backs currencies and plays an indispensable part in settling balances of international trade, will be more fully restored to its vital role.

ZINC AND LEAD

Canada is the world's second largest zinc-producing country and the value of zinc production has increased since the war. Lead production has also increased, although to a lesser extent. The outlook for these two metals is promising because of three large new properties which will be coming into production. Geco Mines Limited, to which I have already referred, will be a substantial zinc producer in 1957.

Brunswick Mining and Smelting Corporation, near Bathurst, New Brunswick, discovered a large lead-zinc property late in 1953 which contains close to 50 million tons of good grade ore. However, its treatment presents certain metallurgical problems. The American Metal Company last November announced a very important lead-zinc find at Little River, New Brunswick.

Consolidated Mining and Smelting Company, which is

by far our largest producer of lead and zinc, has a very extensive deposit at Pine Point on the south shore of Great Slave Lake in the Northwest Territories, containing some 120 million tons of lead-zinc ore. This new property is still in the development stage.

Hudson Bay Mining and Smelting Company, in addition to being the second largest copper producer, occupies the same position in regard to zinc.

There is no zinc refinery in the East. Producers in northwestern Quebec, like Quemont Mining Corporation, Waite Amulet Mines, Normetal Mining Corporation, Barvue Mines, and East Sullivan Mines, ship their zinc concentrate to the United States for refining and sale.

Buchans Mining Company in Newfoundland is an important zinc-lead mine. It is a subsidiary of AS&R Company. To date our lead production has been largely confined to the Consolidated Mining and Smelting Company, although, in the Yukon, United Keno Mines is an important lead-zinc-silver-cadmium producer, being, in fact, the second largest silver producer in Canada and the fourth largest in the world.

IRON ORE

Though iron ore production has shown some growth, this is one item that is destined for very substantial improvement. Last year we produced slightly over 7 million tons of iron ore, a 12% increase over 1953. This brought our production per capita about equal to the per-capita production in the United States.

Our big iron-ore development is that of the Iron Ore Company of Canada in Ungava, which completed its \$250 million project and shipped about 2 million tons of ore before the "freeze-up" last winter. Six million tons is scheduled for this year, working up to an annual rate of 10 million tons in 1956.

THE OBJECTIVE

The objective, on completion of the St. Lawrence Seaway, is 20 million tons per year. This area is said to contain sufficient ore to supply all the Canadian and U. S. steel mills for the next hundred years.

Near the head of the Great Lakes, Steep Rock Iron Mines shipped over one million tons of iron ore in 1954 and has a development program under way which will increase production fivefold to 5½ million tons per annum. Caland Ore Company in the same area, a subsidiary of Inland Steel, is developing an orebody estimated to contain over 100 million tons. Production is scheduled to commence in 1960 at the rate of 3 million tons per annum. Algoma Ore Properties, north of Sault Ste. Marie, is expanding its facilities to handle 1½ million tons of iron sinter per year.

Bethlehem Steel Corporation has just begun production from its magnetite orebody at Marmora. This orebody was overlaid by a bed of limestone 100 feet thick, which had first to be removed. Annual production will be one-half million tons of beneficiated ore.

Noranda's Horne Mine contains well over 100 million tons of pyritic ore, and the base-metal mines in northwestern Quebec have a capacity production of 700,000 tons of pyrite per year, which contains about 50% iron and 50%

sulfur. In this connection, Noranda recently commenced the operation of an experimental plant near Niagara Falls, which will consume approximately 100,000 tons of pyrite per year, from which will be produced 18,000 tons of elemental sulfur and 70,000 tons of iron oxide. The sulfur represents about one third of the sulfur content of the ore, and the remaining two thirds in the form of SO_2 gas, is converted into sulfuric acid at a neighboring plant.

International Nickel Company has developed a new process for the recovery of iron ore from pyrrhetite, which is about 65% iron and 35% sulfur. This will be a contribution of about one million tons of iron oxide annually.

The Wabana Mine of the Dominion Steel & Coal Corporation in Newfoundland is estimated to have reserves of some 4 billion tons of iron ore, with production at the rate of over $2\frac{1}{2}$ million tons per year. This ore supplies the Dominion Steel Company's operation in Nova Scotia, and the remainder is sold in Europe.

Within a few years, Canada will be in a position to supply a total production of some 40 million tons of iron ore. This will be a factor of greatest importance to the steel industry on this continent.

SILVER

There has been growth in *silver* production, but the bulk of this metal comes as a by-product from the treatment of base metals.

The big producer is Consolidated Mining and Smelting Company in British Columbia. However, Torbrit Silver Mines, a comparatively new producer on the West Coast, and a subsidiary of Mining Corporation, has a silver output of 2 million ounces per year, with lead as a by-product.

URANIUM

I should now like to deal with the spectacular metal, *uranium*. Canada's production to date has been negligible, but what promises to be the largest uranium camp in North America is currently developing in the Blind River area of northern Ontario.

Algom Uranium Mines has two properties which will come into production before 1957, each milling approximately 3,000 tons of ore daily. Pronto Uranium Mines, in the same area, is scheduled to come into production this September with a mill one half the size. Consolidated Denison Mines is expected to come into production in 1957 with a 4,000-ton mill, and there are other potential producers in this new rapidly developing field.

Financial arrangements for bringing in these four principal producers have been made to the extent of \$68 million. A further new uranium camp in eastern Ontario is under development in the Bancroft area.

At Lake Athabaska in northern Saskatchewan is an important uranium-producing area. A Government-owned mine at Beaver Lodge has been in production since 1953. Several small mines have since come into production, and Gunnar Mines Limited is scheduled to begin production next September with a 1,250-ton plant at an initial cost of \$16 million.

The increasing demand for *cobalt*, as a strategic metal, has resulted in greater output, chiefly from a small group of cobalt-silver mines in Ontario and partly as a by-product

of base-metal mines in the Sudbury area. By-product *cadmium* is also produced by some of the zinc mines. This metal is used in engine bearings and has an application in connection with atomic energy. *Selenium* is a by-product of some copper mines, chiefly Noranda, Hudson Bay, and International Nickel, and its prime use is in power rectification for electronics, television, and the like.

COLUMBIUM

Two large deposits of *columbium* ore have been discovered and are being developed in Ontario and Quebec. One orebody is reported to be having some difficulty because of the close association of tantalum with the columbium. Columbium is used in high-temperature alloys such as are required for jet engines and in atomic-energy plants.

LITHIUM

Canada's first *lithium* producer is expected to commence operation late this year in northwestern Quebec. This metal is used principally in the manufacture of greases able to operate at extremely low temperature, and is currently the subject of experiments in nuclear fusion as opposed to nuclear fission.

Quebec Iron and Titanium Company, which is controlled by Kennecott Copper, owns an ilmenite deposit of over 100 million tons at Allard Lake, Quebec, and operates a smelter at Sorel for the production of iron and *titanium* dioxide, which is a valuable pigment. Plans are being made for the production of titanium metal, which is useful where weight saving, heat resistance, or corrosion resistance justifies its cost.

Although Canada mines no bauxite, she is the second largest producer of aluminum in the world, because of the availability of hydroelectric power. The Aluminum Company of Canada has an output of 500,000 tons of aluminum per year in Quebec, and its new project at Kitimat, British Columbia, came into production last year. The capacity of this new plant is to be 330,000 tons per year by 1959, with an ultimate capacity of 550,000 tons per year.

Of course, we are not content in Canada to stop with the production of metals, but have also, to a large extent, developed the fabrication of metals for home consumption and for export. Noranda, for example, whose principal production is copper, has two fabricating subsidiaries: Canada Wire and Cable Company, the largest wire and cable company in Canada, and Noranda Copper and Brass Ltd., which is a producer of copper and brass mill products.

In spite of the great growth of our metal production since World War II, I believe Canada is on the threshold of an unprecedented expansion and the outlook of our industry is very bright.

Dividends from Canadian mines have aggregated a total of \$2½ billion and last year amounted to \$125 million. My company, Noranda Mines, has paid dividends in excess of \$180 million.

There seems to be a growing interest in the United States in regard to mining in Canada, and we Canadians have a deep sense of appreciation for the part that American investors have played in the development of our resources.



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Armco Steel Corporation

THE THEME OF THE CONFERENCE was Armco's program and plan for the future as they affect (1) personal relations, (2) physical facilities, (3) financing, and (4) commercial developments. Participants in the conference were C. R. Hook, chairman of the company; W. W. Sebald, president; R. L. Gray, executive vice-president; and D. E. Reichelderfer, controller.

PERSONNEL RELATIONS

C. R. Hook, first speaker, underlined the fact that, since its first publication in 1919, Armco's philosophy in personnel relations at all levels within the organization had adhered to the basic tenet that "Armco Steel Corporation was organized to provide a permanently profitable investment through the manufacture of special grades of iron and steel. . . ."

To implement that philosophy, the company maintains a comprehensive system of incentive compensation at all levels, a broad variety of training programs, a carefully planned program of individual employee evaluation, and a resulting policy of "promotion from within." It was noted that Armco's top management is, and has been, virtually all "home grown."

BETTER-THAN-AVERAGE RECORD

It was noted that among the results of this program have been a better-than-average record by Armco in respect to labor stoppages of production, with three of the major plants never having lost a day's production due to strikes, and a high regard among customers for Armco's reliability as a source of supply.

Evaluating the physical aspects of Armco, R. L. Gray, second speaker, stressed the facts that the company's production facilities—now grown to 4% of the industry's total—were devoted in large part to the manufacture of specialty grades of steel in the category calculated to meet the growing demand for "light" as opposed to "heavy" finished forms, and dispersed to serve the largest markets for such products most advantageously. In keeping with these aims, the company has developed and is developing a variety of fabricated products to promote the uses of the steel products that it manufactures.

Well fortified as to basic raw-material reserves, the company is continuously conscious of maintaining this position, and in recent years has spent considerable sums in this di-

rection, particularly via investments in Labrador iron ore and taconite development and production. Always in the forefront of research on steel products and production methods, as indicated by the company's pioneering of the continuous rolling of sheet steel, Armco still is among the leading exponents of extended and expensive research into better steels and improved methods of manufacture.

EVALUATION OF STEEL MARKETS

Examining the financial problems of an expanding business, D. E. Reichelderfer, third speaker, discussed the planning required by the detailed evaluation of steel markets and careful projections based thereon. Taking a purely hypothetical assumption that the Nation's steel capacity might rise to 160 million ingot tons by 1960, and assuming that Armco's growth would be at least as rapid, it was calculated that resulting capital investment might total around \$337 million.

Allowing the cash flow from depreciation and other non-cash expense items, and after deducting other than new capital investments, it was calculated that, at the prevailing rates of return, retained earnings, after present dividend disbursements, might be sufficient to finance the "new capital" requirements of such a program. But the expectation that new capital expenditures by Armco for additional capacity, as well as improvements to present facilities, would continue to be very large in the years ahead was very plain.

A GROWTH INDUSTRY

Mr. Sebald, concluding the presentation, revealed that Armco, contrary to much opinion, did not consider the steel industry as such to be purely a "cyclical industry" but rather a "growth industry," the basic contention being that demand for steel products today is more and more dependent on consumer expenditures rather than new capital investments. Armco's merchandising and products are primarily directed toward that goal, which accounts for the fact that the company's facilities consistently have operated at higher than the industry average in recent years.

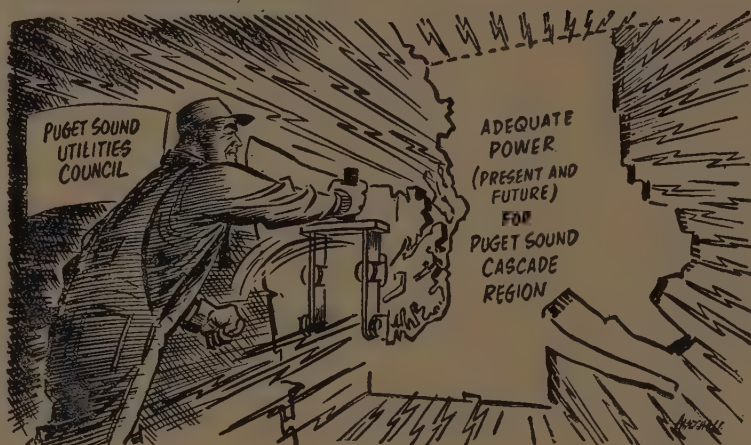
To demonstrate the forward-looking development afoot in this company, as well as in the industry, several examples of new market development were noted, such as the growing demand in the markets for culvert and drainage systems, the growing market potential for prefabricated steel struc-

tures, the perfection of new types of steel which, when properly fabricated, give structural sections with better physical properties than those possible with the use of titanium, and other factors calculated to improve the competitive position of steel in the family of industrial materials, as opposed to other metals, plastics, and the like.

Citing the bright future for steel as an industrial metal,

it was concluded with respect to Armco that "Today our plants are better equipped than ever before. We have greater diversification and a larger number of specialty products. Our steel plants and our fabricating plants are well located to serve their markets. We are firmly established abroad. We are stronger financially than ever before."

POWERLAND, USA



A Blueprint For Power

ONE YEAR ago The Post-Intelligencer hailed the formation of the Puget Sound Utilities Council editorially, and predicted that it would become a power utilities pattern for the nation.

And long before that The P-I editorially refused to believe that so-called "private" power must be entirely dissolved in order for so-called "public" power to operate at the peak efficiencies the future obviously requires.

So, a year ago, we were naturally pleased when the announcement came that Seattle City Light, Tacoma City Light, Puget Sound Power and Light, Snohomish County Public Utility District and Chelan County Public Utility District had joined to form the Puget Sound Utilities Council.

At that time, however, the new Council had no program in the engineering sense. But it did have a joint willingness to create such a program.

Yesterday that program was published. Dr. Paul J. Raver, superintendent of Seattle City Light and chairman of the Council, has termed it of national importance and "one of the greatest forward steps in regional development ever to occur in the Pacific Northwest."

Frank McLaughlin, president of Puget Sound Power and Light, feels that it "is destined to make major contributions to the growth and development of the area."

THE report by engineer Jack D. Stevens and his staff contemplates expenditure of 670 million dollars or more to be invested in new power facilities, and is a blue print to assure adequate present and future power in the area embraced.

It is also a blueprint to end power shortages, brownouts, and bickering. It may well be the beginning of the end of the outmoded concept that utilities must be all "private" or all "public" and never the twain must meet.

The above illustration and text are reprinted from an editorial appearing in the Seattle Post-Intelligencer on April 25, 1955.

PUGET SOUND POWER & LIGHT CO.

Thomas A Edison

INCORPORATED

"A diversified
electronic and electric
manufacturing company"

WEST ORANGE,
NEW JERSEY

CHARLES EDISON, Chairman of the
Board of Directors
HENRY G. RITER, 3RD, President



Televoice for
most efficient
dictation



new, more powerful
EDISON storage batteries



versatile 'V.P.'
EDISON Voicewriter

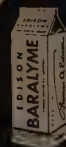
Omniguard—overheat
protection for industry



Standard Signal
Generator—broadcasts
"in miniature" for
laboratory tests



the Carbonaire
widens the market
for primary
batteries



new carton packaging
of Baralyme



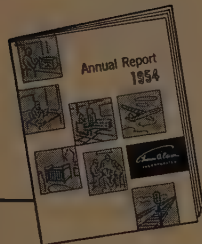
popular new styles
and finishes for Little
Folks furniture

Reports financial statistics on

1954

... a year

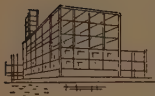
**which saw particular progress
made in product improvement
and research**



copy of annual report on request.

	1954	1953
Sales, less returns and allowances	\$33,047,830	\$41,548,489
Earnings before income taxes	1,258,566	2,862,041
Provision for income taxes	500,708	1,382,546
Prior period adjustments	150,000	—
Net earnings for the year	907,858	1,479,495
Percent of sales	2.75%	3.56%
Per share of common stock (after providing for preferred divi- dends)	1.77	3.15
Average number of common shares outstanding	460,624	440,286
Dividends paid:		
On preferred shares	93,230	93,230
On common shares (plus stock dividend in 1953)	553,696	488,381
Per share of common stock	1.20	1.10
Percent of net earnings paid in dividends	71.2%	39.3%
Earnings retained for the year	260,932	897,884
Working capital at end of year	14,308,086	14,156,840
Shareowners' investment at end of year	20,344,245	19,789,689
Per share of common stock	40.90	41.52

Crown expands to meet growing demand!



PHILADELPHIA New metal lithographing plant nearing completion. Can manufacturing facilities at Erie Ave. & H St. being enlarged.



ORLANDO Enlargement of facilities for manufacture of cans for citrus and other food products recently completed.



BALTIMORE New can manufacturing plant here nearing completion. Will also provide warehouse facilities for crowns and closures.



BARTOW New plant for manufacture of cans for citrus products opened late in 1954.



BIRMINGHAM New crown manufacturing plant opened early in 1955. This plant also supplies lithographed tin plate to the Company's plants at Orlando and Bartow, Fla.



LOS ANGELES Ground acquired for future construction of a manufacturing plant for crowns, closures and cans.



As the year 1955 progresses, Crown's plans for expansion and progress are rapidly becoming realities. To the ever-growing family of Crown customers, these new facilities mean better products and better service . . . for this year and for the years ahead.

CROWN CORK & SEAL COMPANY, INC. Baltimore 3, Maryland

Plants at . . .

Baltimore, Philadelphia, St. Louis,
Detroit, Chicago, Orlando, Bartow,
Birmingham, San Francisco, Los Angeles

PRODUCTS BY



. . . BEVERAGE BOTTLE CAPS • BEVERAGE BOTTLING MACHINERY
MILK BOTTLE CAPS • MILK FILLERS • METAL CAPS AND CLOSURES
CAPPING MACHINES • PACKERS' CANS • GENERAL LINE CANS
BEER CANS • "SPRA-TAINERS" • "FREEZ-TAINERS" • MERITSEAL CAPS

Outlook for Light Metals . . .

The Outlook for Magnesium

W. S. LOOSE*

IT IS DISTINCT PLEASURE to be invited by your group to be a member of a panel to discuss the outlook for light metals. To a degree, I suppose recognition by the financial fraternity is satisfaction of a personal ego among those of us who have been preaching lightness for many years.

Until very very recently, lightness meant frailness or flimsiness to most people. Today, the idea that the everyday things we use and move can be made stronger yet lighter is becoming well recognized by the general public, as well as by industry.

LIGHTEST METAL UNDER DISCUSSION

The lightest of the structural metals under discussion is magnesium. To give you perspective, aluminum is $1\frac{1}{2}$ times heavier, whereas titanium is about $2\frac{1}{2}$ times the weight of magnesium. Yet, all are light metals compared to steel, which is four times the weight of magnesium.

I recognize that your interest is in the future of the magnesium industry. Perhaps the only way we can estimate our future is by judgment of our past. The story of the last quarter century has been one of continuous advancement.

The best picture of the magnesium industry's national growth can be shown by a simple growth curve. On this curve the vertical axis is expressed in pounds on a log scale while the horizontal axis expresses the last twenty-five years.

SEVERAL SIGNIFICANT POINTS

There are several significant points about the picture presented by these growth curves. First, the slope of the trend line indicates a growth by a factor of nearly ten times every ten years. Second, despite the complete elimination of all commercial magnesium markets for a period of four years during the Second World War, the industry was able to pick itself up again in a year or two, and con-

tinue the trend established during the '30's. Third, extending the growth line indicates a consumption of about 250 million pounds by 1960. And, fourth, in 1949, the last year of completely free use before the Korean outbreak, the total consumption of wrought products for the first time exceeded the total cast.

Since that time, there has been a continuous shortage of producing facilities for wrought products. Our own facilities were either out of production or at seriously reduced capacity for the better part of the last year, owing to the startup of our plant at Madison, Illinois. This reduction in production seriously retarded the growth in 1954.

EXACT COUNTERPART OF ALUMINUM

Though not shown on this graph, it is an interesting fact that the magnesium growth curve is an almost exact counterpart of that of aluminum except for the dates involved. The magnesium growth-curve trend is about thirty-five to forty years behind that of aluminum.

Now where is this metal finding its market? Basically, there are three fundamental properties involved.

First, its chemical and metallurgical characteristics. It is an extremely important alloying or reducing ingredient in the manufacture of a variety of products.

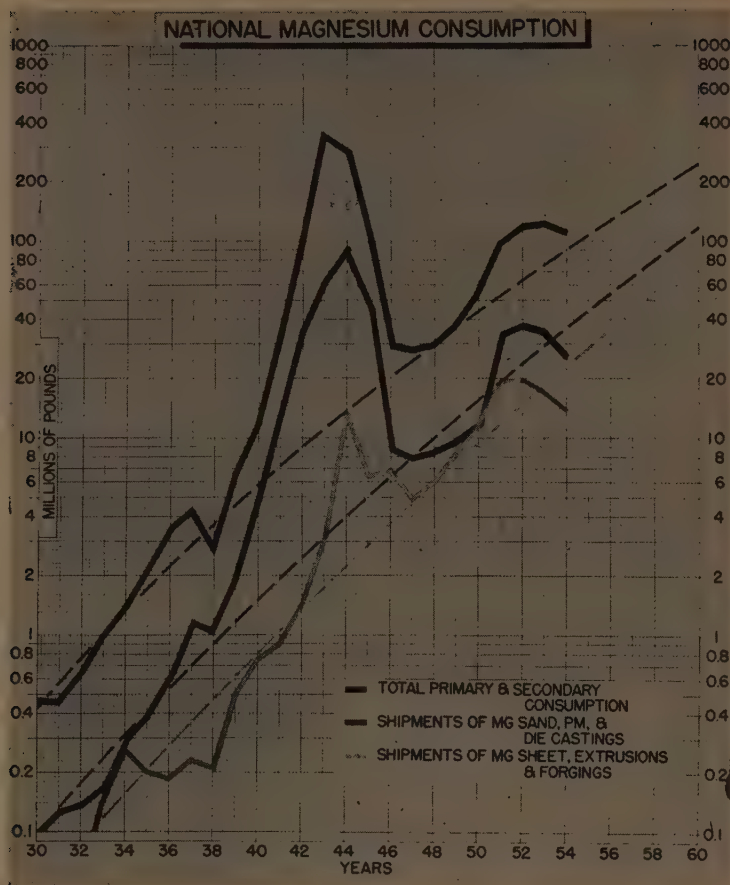
Its second fundamental characteristic is its ability to store up and release electric energy, or, in more technical parlance, its electrochemical equivalent and high useful voltage. This is the basic reason for its widespread and growing use in cathodic protection.

Its third, and most widely recognized property, is its extreme lightness. Because of magnesium's low density and its good usable strength-to-weight ratio, magnesium alloys are used structurally in a wide variety of applications.

MARKETS AND POTENTIALS

Let us take a little more detailed look at the markets and potentials for magnesium. First, let us look at the chemical and metallurgical uses. It is a critical alloying element in aluminum. In fact, on an average, each 100

*Sales manager, magnesium division, Dow Chemical Company.



pounds of aluminum contains nearly one pound of magnesium.

Magnesium increases aluminum's corrosion resistance and strength. Aluminum alloys containing 3 to 4% magnesium are becoming used increasingly, because of better corrosion resistance, weldability, and fabricating characteristics. With a yearly production of about 3 billion pounds of aluminum, we can readily see that nearly 30 million pounds of magnesium is required for alloying.

THE KROLL PROCESS

I am sure you will hear in some detail about the Kroll process for the production of titanium. For completeness, I would like to mention that approximately 1.2 pounds of magnesium are used in the production of a pound of titanium by this process. In excess of 20 million pounds of magnesium will be used in 1955 for the reduction of titanium tetrachloride to produce the sponge titanium.

Because of magnesium's chemical activity in the molten state, it is widely used to remove oxygen, sulfur, or other contaminants from less active metals, such as nickel or lead. Its activity chemically also leads to its widespread use in Grignard reactions, such as for the production of silicones.

Two years ago in addressing your New York group, I

mentioned nodular iron as one of the potential markets for magnesium. The addition of 0.1% of retained magnesium to grey cast iron changes this brittle low-strength but cheap basic material of manufacture to the equivalent of a malleable iron. Subsequent heat treatment provides properties equal of many alloy steel castings. Yet this new material retains most of the favorable casting, machining, and corrosion-resistant properties of the usual cast iron.

This material was unknown until about six years ago. Yet, last year, despite the small quantity added to a ton of cast iron, production of nodular iron consumed about a million pounds of magnesium.

HIGH GROWTH YEARS AHEAD

The high growth years for this product appear to be ahead. In 1954, about 36 million pounds of magnesium were used in chemical and metallurgical applications. In 1955, over 50 million pounds will be consumed in these markets.

Magnesium's second fundamental characteristic, mentioned previously, is its electrochemical activity and high voltage. In this use, magnesium's great ability to supply current and its high useful voltage make it an ideal material for the cathodic protection of steel under a variety of corrosive conditions.

Last year a total of about 11 million pounds of magnesium was used for this purpose. Perhaps a little more detail on these uses and their growth potentials would be of interest to your group.

It all started back in the mid-'30's when a brilliant Dow laboratory research director was declaring that magnesium could revolutionize the protection of ferrous and other metals under many corrosive conditions by connecting it electrically to these metals. To prove it, he connected a stick of magnesium into the laboratory hot-water tank. The steel stopped corroding.

SEVERAL YEARS OF RESEARCH

Several years of research followed to determine the best alloys, types of connection, and service conditions. Commercial exploitation started after the last war, and the use was so well received that, within about five years, magnesium anodes for the protection of water heaters and underground and marine structures accounted for as much metal as the whole national consumption of magnesium about ten years earlier.

In fact, last year approximately 3 million pounds of magnesium were used for the protection of hot-water heaters alone. The rapid change within the hot-water heating industry from zinc-coated steel to glass-lined tanks will more than double the consumption of magnesium in the next two or three years.

OIL AND GAS LINES

An even greater consumer of magnesium in the field of cathodic protection is the oil and gas lines extending across the United States. Here magnesium anodes are buried in the soil adjacent to pipe lines and electrically connected to them. The magnesium anode gives up current which protects the steel under a variety of corrosive conditions. Last year, approximately 6 million pounds of magnesium were used for this application.

Two years ago, I mentioned magnesium anodes for the protection of ships or marine structures as a potential; today it is a reality. In fact, in 1954, a total of about 2 million pounds were sold for this use. It is a fundamentally sound application.

One of the most interesting and practical of these uses is the protection of compartments in ocean-going tankers. Here magnesium anodes are attached to the interior of the compartments and serve to protect these structures while under seawater ballast. Rectifiers are hazardous in this application because of the fear of sparks which would create explosion hazards.

To give you an idea of the magnitude of this use, about 100,000 pounds are required for the complete protection of a medium-sized tanker, and there are approximately 2,000 tankers afloat today. Many of the large petroleum-shipping companies are rapidly applying magnesium to provide this protection.

Two years ago, I showed you a number of magnesium batteries in which a magnesium can replaced the zinc can normally used in a dry cell. I mentioned this as a potential large market for magnesium. I am sorry to say I must still mention this as a potential market.

Technical, cost, and other problems have delayed the

entrance of magnesium into the field of dry cells. During the past two years, however, unremitting effort to solve these problems one by one have brought magnesium dry cells to the point where large-scale market and production testing should soon be a reality.

Field tests of about 30,000 packs of magnesium batteries by the U. S. Army Signal Corps have indicated excellent performance. A large number of additional packs are currently being ordered.

There are at least four advantages in favor of magnesium dry-cell batteries. First is a higher voltage to give a much brighter light over the life span of the magnesium battery. Second, magnesium batteries can be produced that will give much longer life than the normal zinc cells. In the third place, lighter pack batteries can be produced in magnesium, owing to the lower weight of magnesium, but especially because of the smaller number of cells that is required to produce a given required voltage. And, fourth, ordinary cheap manganese dioxide rather than expensive specially chemically purified types can be used with magnesium cells.

The replacing of zinc with magnesium in dry cells is not going to come overnight. But the potential market and the fundamental advantages offered by magnesium are enough to whet the appetite.

The third fundamental characteristic of magnesium mentioned previously is its amazing lightness combined with a good strength-to-weight ratio. This characteristic in structural uses of magnesium has been the backbone of the expanding fabricating industry. Normally, magnesium parts are designed with the simple thought in mind of saving 15 to 20% in weight with adequate strength.

Increasingly, however, engineers are realizing that simple, more rugged, rigid structures can be designed, using monocoque principles. Magnesium is a natural choice in many such structures, since thick sheet and extrusions can be used to give rigidity and to carry loads without a weight penalty and usually with less weight than is obtained with other materials.

GONE INTO BASIC INDUSTRIES

To date a major portion of the semifabricated cast and wrought metal used has gone into the aircraft, materials handling, transportation, printing, textile, and other basic industries. In 1954, structural and printing uses consumed 34 million pounds.

Until recently, the cost of these semifabricated forms has been a major deterring factor in the expansion of magnesium sales. Its uses have been largely determined by the premium the user could pay for weight saving.

For example, in commercial aviation a pound saved may be valued at \$30 to \$100. In military aviation, the weight determines in a large measure the speed, range, and altitude a plane can travel.

There is no value that can be placed on a pound saved. In commercial highway transportation a pound saved means \$0.50 to \$2.00 per year in added revenue to the carrier. In materials handling, weight saving means manpower. Dockboards, for instance, can be handled by one man, whereas with steel or other materials two or even three men may be required to move them into place.

The aircraft industry in 1954 consumed approximately 21 million pounds of magnesium in the form of sand or permanent-mold castings or sheet and extrusions. In this industry, magnesium castings are used for wheels, brakes, engine, and accessory parts. Lesser quantities of castings are used as structural members of aircraft.

Thorium or cerium-containing alloys for uses at elevated temperatures will maintain magnesium in an advantageous position. The use of magnesium sheet and extrusions for secondary structures, flooring, fuselages, wings, and so on has expanded very rapidly since the end of the last war.

SHEET AND EXTRUSIONS

Whereas almost no sheet or extrusions were used on military aircraft in World War II, last year this business used a total of approximately 3.6 million pounds. The serious shortage of magnesium sheet over the last four-year period has greatly retarded the development of magnesium in many aircraft applications. Magnesium sheet and extrusion applications on aircraft have a potential of several times their present volume.

The development of new sheet and extrusion alloys having favorable properties at elevated temperatures may greatly expand the usage in the new high-speed military aircraft and missiles. The rigidity or stiffness obtainable at a weight saving or at no weight penalty by the use of thick magnesium may simplify construction and greatly reduce serious flutter problems at supersonic speeds.

RADAR

Radar and other military applications have proven good markets for magnesium products. The radar market has continuously broadened over the last five years and should continue to expand rapidly, owing to the military necessity of air transportation of this equipment into remote positions. All in all, we see favorable expanding markets for the military applications developed since 1945.

One could almost draw the conclusion from looking at the pronounced effect of wars or emergencies on the growth curves that magnesium was essentially a military metal. This is far from the truth, although military applications play an important part in magnesium consumption. In 1954, approximately 45% of the total magnesium consumed was for one type or another of weight-conscious military application.

Considering that, in eight of the last fifteen years, we have been either in war or under forced-draft military preparedness with attendant shortages, it is surprising that the commercial market has been expanding rapidly. This growth is a tribute to the aggressive ingenuity of the whole industry. Let us take a brief look at some of the new growing commercial markets.

One of the newest stars is the Ultralite Samsonite recently put on the market by the largest luggage manufacturer in the world, Shwayder Brothers of Denver, Colorado. An average case produced consumes approximately 2½ pounds of magnesium sheet and 1¼ pounds of magnesium extrusions.

In this application, magnesium has replaced plywood, previously used as the structural framework. To provide the sleek appearance required for marketing this product,

colored and textured Vinyl sheeting is cemented to the exterior of the magnesium sheet.

Magnesium was chosen because of the weight advantage gained, its rugged resistance to travel damage, and the merchandising value of the metal. Not only does this development by Shwayder Brothers provide an excellent market in itself, but also the attendant advertising and publicity program for merchandising this product has created interest among many other manufacturers in the possibilities of using magnesium to improve and market their products. The luggage market alone should consume upward of 8 million pounds of magnesium per year within a matter of two or three years.

The large metal-consuming competitive truck-body industry is a rapidly expanding market for thick sheet and extrusions. We have spent more than ten years of sales-development work, learning the design requirements of this use and bird-dogging the service usage of magnesium in this market.

MONOCOQUE MAGNESIUM TRUCK BODIES

This work has culminated recently in the introduction of the monocoque magnesium truck bodies. Thick sheet and extrusions eliminate many joints and stiffeners and provide a strong, tough, damage-resistant body of greater cubic capacity. This body can be assembled in a fraction of the time required for conventional body construction.

Though it is somewhat more expensive than the conventional steel body, several hundred pounds of weight are saved. This weight saving is mighty important in lower taxes and added capacity, particularly during the spring months when weight-restriction limits are in force over a large section of the United States.

The largest delivery truck-body builder in the country, Metropolitan Body, a division of International Harvester Company, has recently introduced this new type of construction. Interest is high among a number of other builders and several have already introduced a line of bodies or are at the prototype stage. We confidently expect this market to expand rapidly and become a very large-volume user of sheet and extrusions.

TOOLING PLATE

Magnesium tooling plate, for the construction of jigs, fittings, gages, and other tools, is a new magnesium product introduced within the last year. Magnesium in this application takes advantage of good properties, light weight, superior machinability, freedom from warpage producing internal stress, and price. Excellent early acceptance indicates that this market will consume very large quantities of thick magnesium plate within a relatively few years.

In talking to this group a couple of years ago, I mentioned briefly that the printing industry was a significant sales outlet for extruded and rolled magnesium products. Because of its light weight, but even more because of its chemical etching characteristics, magnesium made substantial progress in a period of six or seven years in replacing the old established metals—copper and zinc—as the engraver's plate in photoengraving.

Even though substantial progress had been made, the

economics of the complete photoengraving process was such that it was difficult to convince the man who was buying and using the engraving that he could save appreciable money by switching to magnesium. A careful analysis by our development group led to the conclusion that labor was the high cost involved in engraving. About an hour of very high-cost labor was required.

Our group pinpointed their efforts on developing a mechanized, fast, high-quality method. The result was the Dow fast etch which in 5 to 10 minutes produces a complete engraving to quality standards previously unattainable.

DOW ETCH PROCESS

The new Dow etch process is making extremely rapid progress in enlarging the normal engraving market for magnesium and is enlarging the total market for photoengraving by making available a low-cost plate competitive with duplicate plate processes. Magnesium consumption prior to the introduction of this process was less than 100,000 pounds per year, whereas last year about a half million pounds were used.

1955 should show a consumption of approximately one million pounds. The potential market for magnesium in this use is 10 or more million pounds per year.

Much of this rapid expansion of the market for sheet and extrusions is being made possible by the new Dow rolling and extrusion expansion at Madison, Illinois. The expansion in total sheet capacity by a factor of 10 or more times, the wide sheet available to reduce construction costs, and the lower prices because of mass production have opened many new markets previously unavailable.

Shwyder Brothers, for instance, had previously considered magnesium but the supply of sheet was inadequate. Tooling plate in the thicknesses and sizes possible from handmills could not be broadly used. The small sizes of treadplate available greatly increased the fabrication costs of dockboards and other items of materials-handling equipment.

All these rapidly expanding markets just mentioned involve sheet and extrusions. I would like to mention another market that appears to be expanding at a very rapid rate.

DIE-CASTING INDUSTRY

This is the magnesium die-casting industry. For a variety of reasons, the main one being cost, magnesium die castings made relatively little progress in the first thirty years of the magnesium industry.

Starting about 1945, Dow undertook the development of competitive hot-chamber methods of die casting. By about 1950, equipment developed to such an extent that a four-machine plant was built. Millions of competitive, completely serviceable automotive die castings were produced.

Last year this process was opened to the rest of the die-casting industry by means of free licenses. A number of job, as well as captive, shop die-casting operations have taken this license and are in the process of installing die-casting equipment.

The favorable price advantage of magnesium, compared

to competitive materials, has been an incentive to this changeover. Since die castings are sold on a volume basis, instead of on a weight basis, it is expected that magnesium through the introduction of this new process will be able to compete throughout a broad range of die-casting applications. A very large market is open to magnesium.

VOLKSWAGENWERKS

I would like to mention the largest individual consumer of magnesium in the world—Volkswagenwerks. Each Volkswagen automobile employs about 60 pounds of permanent-mold or die castings in the crankcase and gear box of the engine.

Eighteen years of excellent serviceability is the record. Magnesium is used because of its light weight and especially because of its excellent machinability.

Recently, I was told by the director of purchases of the Volkswagenwerks that they would have to more than double their machining capacity if they used any material other than magnesium. This company is currently using about 18 to 20 million pounds of magnesium per year and expects within the next year to expand to 27 to 30 million pounds.

I am sure, from this brief discussion of markets, that it is easily understood why Dow is optimistic about the continued rapid expansion of the magnesium industry. I have mentioned only a few of the present and potential markets.

ESTIMATED U. S. SALES

Our estimated U. S. sales by use for 1954 are shown in the accompanying table. At no time in our history have we had the volume of interest being shown in magnesium that currently exists in a wide variety of industries.

The production capacity for primary magnesium is presently adequate and capable of appreciable expansion with-

Estimated U. S. Magnesium Shipments by Use,
Primary and Secondary, 1954

	Thousands of Pounds	% of Total
<u>Structural</u>		
Aircraft & missiles	20,185	21.4
Consumer products	2,820	3.0
Electrical & electronic	1,129	1.2
Machinery & tools	4,306	4.6
Materials-handling equipment	1,795	1.9
Highway vehicles	1,460	1.5
Miscellaneous	660	0.7
Total	32,355	34.3
<u>Nonstructural</u>		
Electrochemical & chemical	11,621	12.4
Alloying	25,000	26.5*
Metallurgical	21,665	23.0
Graphic arts	504	0.5
Powder	888	1.0
Miscellaneous	2,172	2.3
Total	61,850	65.7
Grand Total	94,205	100.0

Total estimated consumption of primary + secondary = 110 million pounds.

out large capital expenditure. Dow's Freeport facility, the only privately owned plant, has a present capacity of about 60 million pounds per year at full load.

The only other low-cost production unit is the Velasco, Texas, plant built by Dow during the war and presently leased by our company to produce magnesium for current requirements. This plant has a present capacity of about 90 million pounds per year to give a total low-cost production capacity of 150 million pounds per year.

There are several other Government-built plants in standby condition, but all are considerably higher-cost operating units. All but one are ferrosilicon-reduction plants.

One of these plants is in operation producing very high-purity metal for the AEC. From our electrolytic plants we obtained by-product hydrochloric acid, which may be used to produce more magnesium chloride for the cells or in producing chemicals.

This brings to our attention one more very basic factor in the magnesium picture—that is, availability. To prove this, let us do a little fancy arithmetic.

All magnesium from low-cost production units is made by Dow's seawater process. Each cubic mile of the seawater contains about 12 billion pounds of magnesium. With an estimated 340 million cubic miles of ocean, we start running out of space to put in the zeros.

We can have a magnesium plant right here in New York or wherever power is available. This immediate availability, particularly in time of war, has been a major factor in the Government's interest in expanding the usage of magnesium.

The available production of primary magnesium, however, is but one step in the building of a large magnesium-fabricating industry. Dow's small-scale sheet and extrusion-production equipment installed during the '30's and modernized in the early '40's was sufficient for that stage of development. A major expansion was required to develop the broad market potentials.

PRICES

This brings up the question of prices. In structural uses, magnesium competition is largely from one of the other subjects on this forum—aluminum. Magnesium pig has been priced for a number of years to be competitive with aluminum on a volume basis. Perhaps I should explain briefly what we mean by volume-equivalent pricing.

Very often in design, questions of rigidity or resistance to deflection are much more important than strength. The actual physical volume of metal used may be the most important factor.

The market for this means of using metals is very large. Consequently, magnesium has been priced so that the actual physical volume of the metal can be bought for the same price as aluminum.

Basic pig prices of these primary metals are 28.5 cents per pound for magnesium versus 21.5 cents per pound for aluminum. Until recently, in the final sheet form, however, magnesium sold for an average of about \$1.10 per pound, compared to aluminum at 30-odd cents.

Although there are metallurgical differences in the rolling of the two metals, the price differential was largely a result of the type of rolling equipment used and the vol-

ume produced. To improve this competitive situation, in 1951 Dow bought the Madison Ordnance Plant at Madison, Illinois, from the Government.

This 35-acre plant site contained approximately 1,400,000 square feet of excellent floor space. About \$40 million has been spent to install new high-speed coil-rolling mills, modern extrusion facilities, and alloy-ingot production.

This plant is just now coming into full operation. These vastly improved facilities will decrease the cost of production, improve the quality of our product, and increase the size of products available to our customers. To meet competitive market requirements, prices have been lowered.

The present potential capacity of this plant is in the order of 20 million pounds of sheet per year in widths up to 72 inches. In addition, we have facilities for the production of about 14 million pounds of extrusions on presses ranging from 250 to 13,200 tons. Thirty million pounds of alloy ingot per year can be produced.

I have mentioned a number of good substantial markets, but you may well ask: Are they now large enough to support such a large plant? No, not at the present time. But as Dr. Doan, our president, aptly put it in a talk about three years ago, it is something of a "chicken or egg" proposition.

NUMBER OF POTENTIAL MARKETS

We have a number of large potential markets in which good strides have been made. Some of these can afford to pay some premium over what they would pay for other presently used materials.

On the other hand, it is axiomatic that these markets will develop more surely and more rapidly if they have available, at lower prices, better-quality closer-tolerance more usable sheet. Some markets definitely could not develop, unless magnesium semifabrication production at least kept pace with growth in other metal-working industries. The presence of an immediate large market for the rearmament program provided the incentive for installing the equipment at Madison, starting in 1951.

Is magnesium a profitable business at Dow? As is true in pioneering any basic business, there have been many long lean years. Up until after the last war, Dow had made no money in its first thirty years of magnesium production.

Before that period, until beginning of operations at Madison, we were operating well in the black. Once the period of rapid amortization at Madison is over, we expect to realize the same return on our investment that is obtained in other metal-working industries such as aluminum.

MOST OPTIMISTIC

In looking at the way some large potential markets are breaking for us, we are most optimistic that we can reach the necessary large-tonnage sales more rapidly than many had anticipated. Two years ago there was no Shwayder Brothers volume on the horizon. Availability of sheet in large quantities changed this overnight. There are many other similar trees in the woods. The ball is in the hands of the sales department.

Outlook for Titanium

ARTHUR R. LITTLE*

TITANIUM HAS frequently referred to as the wonder metal, and in a number of respects it amply justifies this connotation. However, there is one "wonder" not usually embraced in this reference, and that is the wonder of how the metallurgists and chemical engineers have gotten so far in such a short period of time with such a vigorously active metal as titanium.

Although titanium exists in teasing abundance at our very doorsteps and, as you know, is capable of possessing very desirable mechanical and physical properties, it nevertheless has chemical affinities that make its recovery as a pure metal practically an achievement of the first order. This feat however has been accomplished to a great extent, and to the scientist the problems encountered have been challenging and interesting, and the answer to date is at least moderately satisfactory.

You, however, have asked me to address you on the subject of the present and probable future status of titanium and the business potential accruing from it to the several industries related to this metal. Although I am far from being an expert in this field of estimating business potential, I recently have had occasion to read a number of pamphlets that have been issued by men in your group, and have thus learned how you generally appraise a situation of this sort.

As I have been very close to the development of several of the processes, one of which promises to be a major outlet of titanium sponge, I am quite familiar with the general technology involved. I would, therefore, like to discuss titanium from a standpoint of a research technologist, and possibly clarify some points that may have been uncertain or complex in the past, and indicate what the future offers for this metal.

Primarily, you are concerned about the apparently low production levels as compared with projected use levels. Now let us see what the present situation is.

Some years ago it was forecast, or at least scheduled by Government agencies, that, as of 1955, sponge-making facilities would have been set up to produce 25,000 tons per year. This has been raised to 37,500 for 1956.

Actually, there are now set up, either operating or under positive contract, sponge-making facilities for 22,500 tons per year. These facilities produced 7,500 tons in 1954, the disparity being due to the incomplete state of most of the new facilities. In order to firm up this point, the following figures give the anticipated production of sponge with these facilities. There is little reason now for doubting that this objective will be achieved.

1955	8,750 tons
1956	15,100
1957	22,300
1958	22,500

This production may be increased if new facilities are brought in. This means then that, in sponge-making facilities, industry is about three years out of phase with the schedule as earlier planned.

Now we come to the other half of the picture, the demand. Obviously, this at the present time is all military, and 95% of it is in the aircraft industry. Here the picture gets a little confusing, because some estimators have used different criteria and have covered different fields or have had different degrees of optimism. However, the following are the official estimates (as of the 1954 Malone hearings) for aircraft requirements:

1954	9,800 tons mill products required
1955	19,000
1956	35,000

If we go beyond this, which might be considered to be the minimum base, and assume that titanium would be available as a commercial metal, technically sound and valid estimates have been made for military usage upward from 100,000 tons per year. Obviously such estimates by the military envision much more widespread use in airplanes, such as that based on a complete redesign of planes for titanium, extensive application for missiles and/or widespread usage in ordnance as well.

There is no doubt that such relatively great fields of application exist. It has been estimated, for instance, that over 6,000 pounds of titanium could justifiably be used per airplane for much of the structural parts—with weight savings on the order of 3,500 pounds per plane.

Guided missiles and, in fact, any aircraft traveling in the supersonic range are ideal candidates for large titanium usage, and their designers are eager to employ this metal in large tonnages. In fact, the unusual capacity of titanium for maintaining a high strength-weight ratio at moderate temperatures up to 800 F makes it a must for parts subject to frictional heating at supersonic speeds.

Army usage would embrace materiel carried by personnel and light and heavy ordnance of many types and requirements. However, these fields at present have secondary priority to aircraft, but will open up when aircraft requirements are more nearly met.

Numerous attempts have been made to associate increased demand with certain specific lower price schedules. This is always questionable because so many factors other than cost influence the decision, but, even for military uses, lower cost would very favorably affect consumption. However, it has been estimated that a reduction in the price of sheet to about \$5 per pound would definitely encourage a beginning of a civilian market, perhaps on the order of 10,000 tons per year, and a recent prediction† (for the fu-

*Director of research, Electrometallurgical Company Division, Union Carbide & Carbon Corporation.

†H. H. Kellogg, "What the Future Holds for Titanium," *Engineering and Mining Journal*, April 1955.

ture) by a reputable titanium specialist was for 200,000 tons per year at prices on the order of \$2.50 per pound in sheet form.

We can depend, therefore, on a continuously and rapidly expanding demand, which is well justified technically and which will require a very respectable production in the not too distant future. Actually, however, what is the recent production picture? The following figures present this briefly.

1948	2 tons titanium mill products
1953	1,100
1954	1,300
1955	1,800 (est.)

Examination of these data raises several critical questions that are of basic significance to an understanding of the status of the titanium industry, namely: Why were not more tons of titanium fabricated into mill products in 1954? What is being done to conform more nearly to the earlier set schedules and demands? What is being done to reduce the cost ultimately so as to make possible the hoped-for 100,000-plus tons per year production? As these questions are in great measure interrelated, they can be discussed simultaneously.

Actually the production of mill products was low because the Government, through the aircraft manufacturers, did not order the products from the producers. However, there is a very understandable reason for this if the problems associated with designing of new airplanes and with the introduction of new alloys are considered.

In the first place, the planes that were built in 1954 and probably those to be built in 1955 were on the drawing boards as much as four to five years ago. At that time the potential value of the light weight and strength of titanium alloys was recognized, but the designers could not very well plan on this metal, as they had no design and performance data on which to depend, and no positive assurance that such alloys as they knew about would surely be available in quantity and quality for their planes.

Therefore, they could only apply it as a direct substitute in some parts at later stages in the design. This is poor procedure, as one of the axioms of engineering design is to base design on the properties and performance of the alloy being used. Otherwise, little advantage is gained by mere substitution.

It is quite probable that this same condition may exist for a couple of years more, or at least until it is possible for the designers to evolve airplanes or airplane components that are basically designed for titanium, with the full knowledge that such alloys will be procurable and will have dependable and satisfactory service. So we can see that, from the design standpoint, the problem is the type that progressively solves itself with time—and the rate of progress should now accelerate.

There is a second facet to this problem, which is directly related to the over-all technology and metallurgy of titanium. I think it necessary to understand this matter in order to realize the difficulties involved in introducing a new metal or alloy product.

The situation is very closely comparable to that which existed for stainless steel and aluminum, but perhaps has

been complicated by the demand of the Government to compress the time factor. For instance, stainless steel in its early days required much fundamental and applied research before the right alloys had been developed, their properties determined and made available to designing engineers, and suitable mill and fabricating practices worked out. Several times it seemed that the problems were insurmountable, but they were solved, and stainless steel is now a well-understood and easily handled engineering alloy.

So with titanium. Although a tremendous amount of work has been done over the past several years on exploring the alloys of titanium and all problems associated therewith, and several commercial alloys have been developed, the best of them still has not been demonstrated to have the dependability and consistency necessary for broad engineering application in such critical uses as aircraft parts.

Another source of difficulty in these early days of titanium has been the natural tendency to demand the maximum of all properties in commercial alloys. High strength was needed to gain the optimum advantage of titanium, but easy processing and fabricating required a high degree of ductility and softness. In the desire to meet such specified conditions and under the hectic circumstances under which much of the early alloy development was carried out, compromises were made.

Although the results of such compromises are well understood and recognized in steel and stainless-steel metallurgy, this is not yet so in titanium. In other words, what is needed is a real understanding of the technology of titanium-alloy metallurgy.

What is being done to correct this situation? Probably the most significant factor is that, as a result of the experience gained in several years of handling titanium and in trying to come to grips with the manifold problems involved, industry now recognizes the specific and general problems that must be solved. This was not true earlier. So, there are now definite, well-planned and well-organized active research and development programs, being directed by Government and industry to solve many phases of this basic problem.

For example, the sponge makers are gradually but surely producing sponge of progressively greater purity. Such sponge will serve as a progressively better base for alloying, permitting dependable and consistent alloying, heat treating, and fabricating response.

Second, intensive studies are being made of alloy compositions, studying the individual and combined effects of alloying metals in the light of the higher-purity sponge now obtainable. This is an essential facet of the entire problem because, from this work, will come the basic understanding of alloy behavior and the means of attaining the desired mechanical properties. Third, fabricators, sponge producers, and independent research workers are studying fabricating procedures, heat-treating response, and forming characteristics; that is, all the operations through which the alloy must pass before it is in useful form. The response to these operations varies materially with alloy composition.

In this connection, it must be remembered that almost

exclusively steel and stainless-steel fabricators have handled this end of the titanium picture, and they have had to adapt their facilities to the requirements of titanium. It is now clear that at least with some titanium alloys such practices and facilities are not best suited to titanium. Decisions in regard to this are being made as rapidly as possible, to the betterment of the titanium mill-products picture.

But it should also be remembered, in considering this part of the story, that until now the fabricators have not had the same type of Government assistance in studying, developing, and setting up these facilities that was extended to sponge makers. Therefore new mills, heat-treating furnaces, and the like were not possible, except under very special conditions.

This situation is gradually being corrected, however, first, by industry who now can see sponge of consistent quality and higher purity becoming available and better alloys being developed and therefore can foresee a sufficient market to justify the heavy expenditure and, second, by the Government who have now recognized this problem and are taking active steps to assist industry in this field. This new activity by the Government is going to take a manifold approach but will really be very tangible in its results if put into effective operation.

A typical example of the troubles of titanium and the steps taken to overcome them is afforded by the hydrogen story. About a year ago hydrogen raised its ugly head in the titanium field, and almost immediately all the troubles of titanium were attributed to hydrogen.

However, since then, it has been shown that hydrogen can be added or removed at will during the melting step or in subsequent processing, and its specific effects are being gradually learned. It is an important impurity, and, until the amounts of hydrogen that can be tolerated are determined for the alloys in use, special attention will have to be directed to its control, even to the extent of vacuum-annealing the final product. This picture is therefore rounding out, and, in a matter of another year, the full story about the effect and control of hydrogen in titanium should be available.

On the other hand, a satisfactorily weldable high-strength alloy or satisfactory welding techniques for current alloys are not yet available, and this is restrictive in some respects to full application of titanium. However, the basic requirements for weldability are becoming better appreciated, and this shortcoming also will be overcome. Thus, titanium is a better metal for each of these crises through which it passes, and we should not be too impatient when such difficulties arise.

So much for the basic metallurgy of titanium. As pointed out before, even if the sponge is produced at relatively low cost, under present fabricating practice the high-cost increase during subsequent processing discourages any tonnage use for any appreciable nonaircraft market, except in unusual circumstances.

At present, about 60% of the metal in an ingot arrives as a final product in sheet, bar, or plate form. This is not too different from standard stainless-steel practice but could be higher because of the different type of ingot practice.

As more and larger ingots are processed, as greater experience is gained, and as new practices are introduced to

minimize need for pickling, grinding, and similar processes, ingot yields will materially increase. It is easily envisioned that alloys with improved hot-working properties may be developed, and that recourse may have to be taken to annealing and heat treatment in large vacuum furnaces to avoid the need for pickling.

It is too early yet to anticipate the types of changes that may be required, but it is certain that mill practices especially suited to titanium can and will be worked out to reduce this broad spread in costs. Relatively large amounts of sponge are processed by the fabricators and melters working on new methods, and the results of this work will soon be reflected in improved and lower-cost methods.

Throughout some of the pamphlets that have been prepared by members of your group, there were frequent references to the hopes for two eventual developments: (1) an electrolytic process, and (2) a continuous process. My particular thoughts on both of these are that neither by itself offers the promise of special low cost that is implied.

In the Kroll and similar metal-reduction processes, actually the use of magnesium and sodium which have already been electrolyzed may be considered to introduce into the process the power and economies relating to electrolysis. Electrolysis in itself does not necessarily bestow the essential improvement in quality that is the final determinant in titanium metallurgy, but the electrolytic process may have other advantages over the current metal-reduction processes. Electrolytic processes are being thoroughly explored by a number of companies, and there is a strong probability that at least one of them will produce high-quality titanium. The economies of these processes will be known better then.

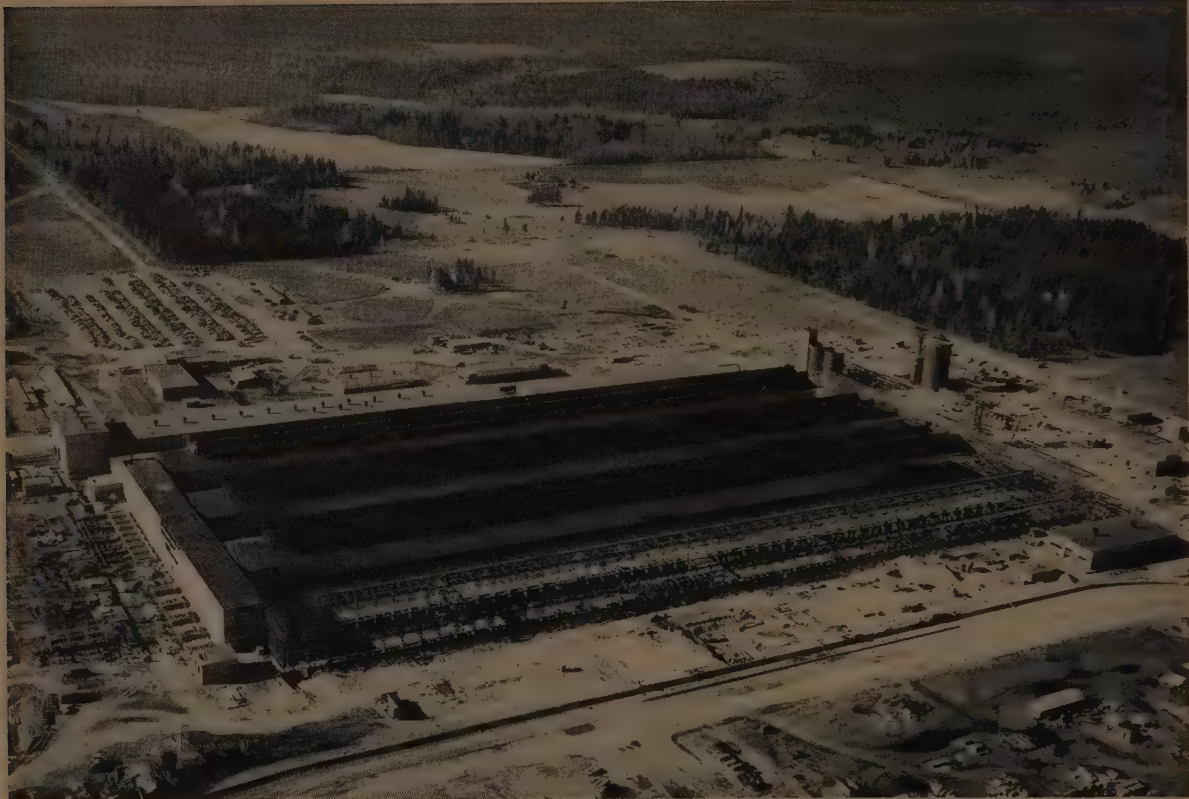
The same type of reasoning exists also in relation to a continuous process. Continuity of operations is not necessarily an element of low cost.

Even steelmaking is a batch process. The point, however, is that the batches are very large, on the order of 200 tons.

As soon as the economics permit, and after a few more problems have been solved on the technical level, titanium will also probably be handled in much larger batches. This refers not only to sponge batches but to ingot size, both of which should result in appreciable lowering of cost.

I have tried to point out to you some of the thoughts that exist in the minds of those who are responsible for the titanium production, and some of the aggressive and well-planned steps that are under way at all levels, to attain the desired objective of a strong, vital, and sufficient titanium industry. Titanium can and will be a significant engineering metal in the not too distant future, and industries that are now in the sponge-melting or fabricating portion of this development are on the ground floor where very valuable experience is being gained.

Neither a titanium nor any other industry can be created by waving any kind of wand—but only by hard work guided by experience. This is now being very conscientiously undertaken, and, although it may take a few years before this type of experience and effort pays off, the foundations thus laid should support that vigorous titanium industry that is certainly ahead of us.



Anaconda Aluminum Company Reduction Plant at Columbia Falls, Montana. This plant... scheduled to begin production by July 1st... will supply aluminum needs of Anaconda Wire & Cable Company, The American Brass Company and independent fabricators.

Anaconda

is making news in

Aluminum

The newest news about aluminum can be set down in a single sentence:

Anaconda is entering the aluminum business from alumina to market—is intent on giving American industry the same high-quality products in the field of aluminum as it has done traditionally with copper, brass and bronze.

Illustrated above is the Anaconda Aluminum Company's reduction plant under construction at Columbia Falls, Montana. It is of the most modern design, incorporates the most advanced production techniques, and will have an annual capacity of 120,000,000 pounds of aluminum per year. It is scheduled to begin production July 1st, and will supply metal not only to Anaconda's own fabricating plants, but to others as well.

Meanwhile, at near-by Great Falls, Montana, a new and completely automatic rod-rolling mill—the most up-to-date in the country—will be supplying rod to Anaconda Wire & Cable Company's wire drawing and cable stranding mills.

Across the country at Terre Haute, Indiana, another Anaconda subsidiary, The American Brass Company, is building an integrated fabricating plant which will process aluminum and its alloys into sheet, rod, seamless tube, and extrusions for a host of industrial uses.

55227-A

ANACONDA

The American Brass Company
Anaconda Wire & Cable Company
Andes Copper Mining Company
Chile Copper Company
Greene Cananea Copper Company
Anaconda Aluminum Company
Anaconda Sales Company
International Smelting and Refining Company

Aluminum

JOHN H. KREY*

IN THE FOURTEEN YEARS that I have been following the development of the aluminum industry, production has expanded about tenfold. You can understand, therefore, that this is not likely to be a story of deep travail. The difficult part of this assignment is to segregate, for this 20-minute discussion, certain factors that influence our business and highlight them in a way that will be informative and helpful to an audience of investment analysts, each of whom has varying degrees of interest in this business.

STEEL VERSUS ALUMINUM

Some of you may not know that it costs perhaps four or five times as much to construct a ton of aluminum capacity as it does a ton of steel. Therefore, 20 minutes on the financing of a growth industry like aluminum might be moderately helpful, but, in such a growth industry, you would be equally interested in hearing about the adequacy of low-cost ore reserves or the future sources of power.

However I beguile myself with these excursions into what you might like to hear in 20 minutes, I always end up by attempting to highlight two ideas:

1. Develop a wider understanding of what makes aluminum go.
2. Show where it is going.

Before I continue on these two points, I would like to say, almost as an aside and certainly as a personal view, that there is a tendency in many of the studies on aluminum that I have seen to overemphasize power costs. I think that this emphasis tends to distort the balanced view and bring it a little out of focus.

INTEGRATED PRODUCERS

My conception of the industry is that the principal producers are integrated producers from bauxite to and through mill products. This involves a whole structure of various costs. For example, last year Reynolds Metals Company spent over \$30 million for transportation—a larger expenditure than our total power costs. Yet the recognition and evaluation of this and other components is sometimes subordinated to power costs.

Aluminum pig sells for 21½ cents. In 1954, our company sold over 800 million pounds of products for over \$300 million, which is something like 40 cents per pound. Our principal concern, therefore, is the net cost to us in delivering the product to the customer's door.

MANY REASONS FOR GROWTH

There are many reasons that account for the growth of aluminum, but the two underlying factors which dominate my thinking on growth are these: First, aluminum is not a metal of specialized uses. It is a mass-use material! Second, aluminum is a metal of great versatility.

I have made these points before, perhaps to some of you in this room, but, because they are to me so basic I want to elaborate on them again, for from various discussions with analysts, stockholders, and investors I conclude they are not yet sufficiently appreciated.

MASS-USE MATERIAL

When I say that aluminum is a mass-use material, this is a "free-wheeling phrase," to bring out the point that it is used in bridge construction as well as in the wrapping of cigarettes or the cooking of turkey. It is used in the manufacture of lawn mowers as well as automobiles.

It competes with paper—in the packaging and label field, with wood—in furniture and construction, and with steel—in literally hundreds of uses. It competes with copper, lead, and zinc in many ways that are well known to you. It competes with glass, plastics, and tin as, for example, in the container fields.

METALLIC THREAD

Aluminum metallic thread competes with yarns and synthetics. It is in competition with many insulating materials. In brief, aluminum is used in products all the way from prepared medicines to a 40-story aluminum bank building in Dallas, Texas.

The second underlying factor is that aluminum is versatile. To my mind, that means that it is light in weight and yet has good strength. It does not rust, meaning that there is great saving in maintenance costs.

GOOD WORKABILITY

It has good workability—that is to say, it is easily drawn, machined, and fabricated. It can be formed into the most intricate designs, which is of significance to the design engineer and stylist.

It is nonsparking, and it is easy on tools. It is a fine conductor of heat and a good reflector of light. It is nontoxic, as well as a good moisture-vapor barrier, meaning that it is friendly to packaged products and foods.

It has a naturally fine finish; yet it can take beautifully many types of color anodizing. Finally, it is relatively low in cost and high in scrap value.

SILENT SALESMEN

These two underlying factors, mass use and versatility, are the silent salesmen of aluminum! The broader the appreciation of these factors, the greater the influence on the design engineers—and on the consumer who, in turn, influences the design engineer. Time after time, we are finding that it is not one or two of these factors, such as strength and low cost, but a group that combines to identify aluminum as the superior material for a specified use.

About a year and a half ago, when our industry was just about completing the job of doubling its primary production capacity, a frequently expressed opinion was that "the

*Vice-president, Reynolds Metal Company.

great test of aluminum would come when the cold war ends and defense orders have terminated." Well, what are the facts a year and a half later?

Let me review just a bit. In 1950, total supplies — meaning primary production, imports, and scrap recovery—just about equaled total shipments of 2,400 million pounds. From then and until mid-1953, aluminum was under strict allocation.

RECESSION IN METAL DEMAND

When these controls were removed, a recession began in metal demand which did not reverse itself, as you remember, until the second quarter of 1954. Despite these adverse factors, total shipments for 1954, exclusive of deliveries to the Government stockpile, increased to 2,911 million pounds.

In the first six months of 1955, orders shipped or on the books have risen so rapidly that, if we were to project these on the basis of a 12-month result, total shipments for the year, exclusive of the Government stockpile, would be at least 3,600 million pounds. Compare this with the 2,400 million in 1950 or the 2,911 million in 1954.

TOTAL SUPPLY FOR 1955

The estimated total supply of aluminum for 1955—that is, all primary production plus imports, plus scrap recovery—will be in the neighborhood of 4,001 million. Because we do not know what the Government stockpile will elect to option, and cannot say with certainty what the imports will be, we cannot now project this 3,600 million pounds for the year. I cite it here only to give you some notion of current demand and to compare it with the 1950 and 1954 level.

85% COMMERCIAL BUSINESS

More to the point—85% of this current demand is classified as commercial business. Approximately 15% is going into defense and products.

This is the kind of increasing demand that has prompted Alcoa to announce within the last few weeks a further expansion of 130 million pounds of capacity and for Alcan to announce a further increase in capacity in Kitimat of 300 million pounds for 1957.

Today, aluminum is flowing into all major industries. Although there are no authoritative compilations, I do have a composite compilation which may be useful to you. It shows that transportation will use about 23% of the total shipments.

Architectural and construction	21%
Appliance and equipment	13
Machinery and equipment	11
Electrical and communication	11
Paint and chemical and destructive	7
Packaging	7
Miscellaneous	7

Because of time limitations, I will confine my comments to the two most important fields: transportation and construction, which together are now using some 44% of total shipments. You will understand that there is an increase in demand in each of these other classifications, and some, as in the electrical or packaging fields, is very pro-

nounced. An estimated 850 million pounds of aluminum will be used by the transportation industry this year, 500 million of which will go into motor vehicles of all classifications, 300 million into aircraft, and perhaps 50 million into railroads, shipping, and so on.

I will talk first about the motor-vehicle industry—a few years ago I was pointing up rather proudly that 10 pounds of aluminum was being used per car. Recently estimates indicate a minimum of 20 pounds. Our company believes that, giving effect to replacements and to the most recent demand for interior and exterior trim, the average is nearer 35 pounds.

STYLING DOMINANT IN AUTOMOBILES

Where do we go from here? In the sale of automobiles, styling is a dominant factor, and the significant point today is that aluminum is competing with chrome. Stylists are now specifying that soft satin finish obtainable through aluminum. Because of this and aluminum's versatility, our 1956 and 1957 models will show more aluminum than those in 1954 and 1955—in the form of radiator grills, instrument panels, trim, forged wheels, and possibly hub caps.

Aluminum also competes with other materials for this industry's business on the basis of performance and costs. One example of this is the torque converter, an intricate pattern that is quickly made in aluminum castings. Aluminum castings, in many instances, are also machined and finished quickly and cheaply and so are less expensive than other materials in their finished form. The aluminum transmission housing is an example.

DESIGN INTO LIGHTWEIGHT METAL

As air conditioning, automatic transmission, power brakes, and steering are added, weight increases and demands on the engine are greater. The tendency, therefore, is to design into lightweight metal if it can be obtained at no greater net cost.

For the longer view, I have seen estimates indicating over 100 pounds of aluminum per car, in the additional form of such items as radiators, battery cables, bumpers, forged wheels, and differential housings. Larger die-casting machines will make further economies possible with aluminum.

In all, 60% of the van-type trailers and 80% of the refrigerator-type trailers are now made of aluminum. To quote an official of Greyhound: "Weight is still the biggest profit killer in road transportation." To be brief, there appears to be a steady increase ahead for aluminum usage in the motor-vehicle industry, and my optimism stems as much from the breadth of the planning and development work going on in their industrial and design laboratories as it does from the larger sales and inquiries flowing through the district sales offices.

60 MILLION POUNDS USED IN 1940

In 1940, 60 million pounds of aluminum was used in the entire construction industry. By 1950, this had risen to 450 million pounds. For 1955, the estimate is 750 million pounds.

Let me read you a list which shows how aluminum is

used in construction: curtain wall, windows, screens, shutters, awnings, store fronts, marquees, doors, insulation, elevators, escalators, moldings, hardware, lights and air ducts; on the farm, in the form of portable irrigation containers for liquid fertilizers, roofing and animal shelters; in the home, in the form of shingles, gutters and downspouts, siding, garages, doors, windows, and carports; and, on the highway in bridges, railings, light fixtures, signs and stanchions. You may get a better comprehension of tonnage involved when I tell you that just one item, the aluminum window, uses about 175 million pounds per year, and, although the growth has been rapid, it accounts for only 25% of the total window demand.

THIN CURTAIN-WALL CONSTRUCTION

Within the last few years, architects have been designing buildings of thin curtain-wall construction, and here aluminum, because of its versatility, has opened up a whole new field of design opportunities for the architect. The results are reportedly lighter foundations, lighter structural members, more rentable space, speed of erection, and low maintenance.

It was only two years ago that our industry was speaking about a few aluminum buildings under construction, and perhaps 60 or 70 on the drawings boards. Today, the industry has lost count of the new starts. They are referred to in terms of several hundred.

VARIOUS STRUCTURES INVOLVED

Various kinds of structures are involved. Monumental, commercial, plants, and schools are in the trend.

We have seen several right here in New York City, with variations from a complete aluminum skin to the use of extrusions, spandrels and mullions of aluminum. A 40-story building of curtain-wall aluminum has recently been completed in Dallas, Texas, and a number of multistory buildings are now under construction.

Actually, the modernization of older buildings offers a great potential, as, for example, the department store with its brick and window construction. In this day of air conditioning, window spaces are a hindrance. Modern aluminum design can be used to sheath the entire building and give it a modern, even new look.

COLOR-ANODIZED ALUMINUM

If I were to select one relatively new field and one new use which holds greatest promise for our industry, I would say the field is the construction industry, and the use is color-anodized aluminum. You need only to look at the magazine advertisements, at the car in the street, at the new homes, even the clothing you wear, to understand the part color is playing in our modern life. Color-anodized aluminum gives to the stylist, the designer and architect, a light, strong material which not only can be worked into new effects and shapes, but can be finished in beautiful fast colors as well.

NEW FIELD OF DESIGN

It, too, opens up a new field of design. These colors are not applied to the surface like a paint. These are weather-resistant colors, in which the aluminum surface is first

converted to a ceramic-like oxide by means of an electrolytic process, and the color is then impregnated and sealed for permanence.

Color-anodized aluminum will be used, I am told, by the architect, the automobile designer, the appliance and furniture designers. Color-anodized aluminum buildings are now beginning to appear.

My company is supplying over 2 million pounds of aluminum to go into four 28-story apartment buildings in Chicago. The architect is Meis Van der Roh. This will be a class-A apartment in which the outside members will be black-anodized aluminum with gray tinted glass.

ADOPTED BY REFRIGERATOR FIELD

We have seen how color-anodized aluminum has been adopted by the refrigerator field. Kitchen ranges are now using color-anodized aluminum for their instrument panels, and its use is spreading in the utensil fields. Next year, I would expect that we will see colored grills and interior trim in various automobiles.

Today I have suggested that, to evaluate the basic factors influencing the growth of aluminum, we should think in terms of aluminum as a mass-use material and as a metal of great versatility. I have spoken about the very considerable increase in current demand which has brought about announcements within the industry to further expand their production, even while opinions that the industry would have difficulty in absorbing the Korean expansion were still warm. I have pointed out that, though this increased demand is coming from many industries, the greatest future demand may be coming through the development and use of color-anodized aluminum and from the construction industry.

Do I sound optimistic to you? One of the leading manufacturers of electrical equipment and appliances who would be, of necessity, concerned with the future supply of raw materials, concludes in a recent study on this subject that, "By 1963 over 5,300 million pounds will be required to take care of the U. S. industrial demand."

INCORRIGIBLE OPTIMISTS

The President of Alcoa said recently that his company "was continuing its studies on increasing both production and fabrication of aluminum," and ended by saying: "We are still incorrigible optimists." The President of Kaiser Aluminum says that "The future outlook is increasingly brighter, with new and greater uses continuing to develop." The President of Alcan said that "The decision to proceed with further expansion reflects what appears to be an unrelenting demand for quantities of primary aluminum."

The President of Reynolds Metals Company says that the use of aluminum has spread so widely and to so many industries within the past decade that it would appear that momentum alone would assure a rising volume of business for a substantial period ahead. "Notwithstanding," said he, "the outlook for new uses of aluminum has never been brighter in our experience."

And so may I close by pointing out that all of the best estimates I have seen during the last ten years dealing with the future of aluminum have proved, in the light of events, to have been too low?

*Union Electric growth
continues...revenues up 7%
for first quarter of 1955*

Kilowatt hour sales in the first three months of 1955 show increase of 12% over sales in the first quarter of 1954

THE GROWTH of Union Electric is inseparably linked with the growth and economic health of the productive 18,000 square mile area we serve. Each implements the other. Each depends on the other.

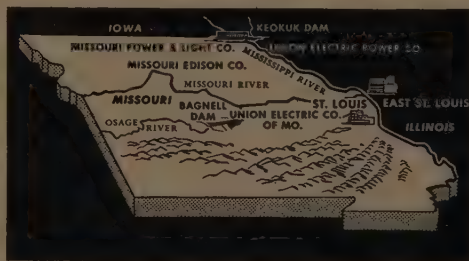
A significant development in Union Electric's first quarter kilowatt hour sales figures is the continued upward trend of sales to large commercial and industrial customers—a trend that began in November and December of last year following a nationwide leveling-off period after the Korean armistice.

Such expanded use of electricity is always evidence of business and industry moving ahead, making progress. It adds further conviction in our minds that our faith and investment in the future of this area are not misplaced.

You, too, may well find much of that same conviction about Union Electric territory as a location for your business. Many new industries have located in our area, many others have major plant expansion programs in work. In fact, manufac-

turers here report more than \$125 million spent on new industrial facilities in 1954.

We can be of help to you by supplying information you may need to evaluate the industrial site advantages of this area. We hope you will ask us for it. Please address inquiries to: J. E. JOHANSON, Industrial Development Engineer, 315 North 12th Street, St. Louis 1, Missouri.



UNION ELECTRIC COMPANY OF MISSOURI

Subsidiaries: *Union Electric Power Company
Missouri Power & Light Company • Missouri
Edison Company • Union Colliery Company
Poplar Ridge Coal Company • St. Louis &
Belleville Electric Railway Company.*

CHAIRMAN
HOLLIS K. THAYER
Dominick & Dominick

HONORARY CHAIRMAN
WILLIAM G. MAAS
White, Weld & Company

Grand Union Company

THE CONFERENCE WAS INFORMAL in character, and all comments were made from rough notes. Maps and charts were used to explain various points made in connection with the company's business.

An unusually graphic picture was presented of the food-chain industry, and the position and prospects of Grand Union therein. In addition, those who attended were provided with an understanding of executive group action through delegation of responsibilities combined with integrated over-all control.

PARTICIPANTS

The participants were Lansing P. Shield, president; Hugh J. Davern, senior vice-president; Garland Milburn, vice-president in charge of development; William H. Preis, vice-president in charge of route division; William F. Dempsey, vice-president in charge of store operations; W. W. Brady, vice-president in charge of public relations; Lloyd W. Moseley, secretary and director of personnel; Thomas C. Butler, treasurer; and E. R. Silvers Jr., executive assistant to the president.

Mr. Shield opened the conference with statements concerning the food-chain business. Each of the participants discussed various phases of the company's business and outlined the policies and programs relating to his division of the company's operations.

SHOPPING HABITS CHANGED

Automobiles have changed shopping habits and are making one-stop shopping centers very popular. Food chains are also benefiting from the high birth rate and longer life expectancy. The percentage of income spent for food remains consistent, meaning larger dollar amounts as income increases.

SALES

For the year ended February 26, 1955, sales of Grand Union were \$219 million, are now running at an annual rate of \$260 million, and, by the end of this fiscal year, are expected to be at a \$300 million annual rate. In April, Grand Union sales were 24% higher than a year ago—a record increase for any month—and they contrast with a decline for some of their competitors. New stores are primarily responsible for this increase.

Grand Union will open more new stores in 1955 than

in any previous year. Personnel will be increased by about 3,000.

It is the company's policy to lease stores. Their leasing policy is for a term usually fifteen years or less, with renewable options.

LEASES

Some leases in the industry are from twenty-five to thirty years. Most of them are gross leases. Grand Union believes that the shorter leases are worth the penalty paid because of possible area changes in the future, such as in population and trend to larger stores. They are willing to pay for a location depending on their estimate of possible business, and they "go slow" if the rent paid exceeds 1% of estimated sales.

Planning expansion will be mostly within the present operating area, which is largely within the Middle Atlantic States. In Canada, they plan to expand within the Province of Ontario.

Stores now being built average about 21,000 square feet each, and, in regional shopping centers, some will be two to three times this size. The cost of furniture and fixtures per store is \$100,000 to \$150,000, and merchandise inventory is \$100,000.

For personnel, Grand Union solicits high schools and colleges, and conducts training programs. They were instrumental in Michigan State College offering courses in food-store merchandising.

Through the company's training program, they have built up a young and strong second and third team management. They have a stock-option plan for all employees, and a profit-sharing plan from store managers up.

MERCHANDISING

A close check is kept on turnover of items. Grand Union stocks over 5,000 items.

There is a strong trend toward prepared foods. In the frozen-food lines, fruits and vegetables are the best volume, and there is now a swing to prepared dinners.

Meat sales are about \$1½ million a week. Grand Union stocks only the two top grade, prime and top choice, meats. They are the only chain that dates all meats. Meat is the heart of their merchandising policy.

Nonfood items are about 4% of sales and use 5% of store space. Profit margins for these are about double

those on groceries. Grand Union is able to price these items considerably under the retails of department and variety stores.

Grand Union will not stock any merchandise where style or size are considerations except a few items such as socks, stockings, and some other dry goods. They now stock toiletries, pots and pans, records, pet supplies, and magazines.

ROUTES

Their route division has cut back in the past seven years from 1,000 to 586 routes. They are making a profit and

are no drag on the company's earnings. However, they have no plans for expansion. High coffee prices hit the route trade a year or so ago.

Trading stamps and premiums in the food-chain business are a headache. Grand Union is combating this competition with good pricing and similar attractions. It is their policy to change the retail price immediately when wholesale prices decline.

In 1954, the net profit margin was good, and they do not anticipate any change in trend for 1955. Meat is more profitable than over-all products.

CODSEN PETROLEUM CORPORATION

Dividend Notice

The Board of Directors has declared a regular quarterly dividend of $37\frac{1}{2}$ ¢ per share on the common stock of this Company, payable June 17, 1955 to stockholders of record at the close of business June 3, 1955. This represents an increase over the previous dividend rate, which was 25¢ quarterly.



R. L. TOLLETT,
President

May 23, 1955

104

consecutive
dividends

■ A quarterly dividend of 45¢ a share has been declared on the common stock of this company, payable on July 1, 1955, to shareholders of record June 7, 1955.

■ A quarterly dividend of \$1.00 a share has also been declared on the preferred stock of the company. It too is payable on July 1, 1955, to shareholders of record June 7, 1955.



LABORATORIES

Manufacturing Pharmaceutical Chemists
North Chicago, Illinois

Pullman Incorporated

89th Consecutive Year of
Quarterly Cash Dividends
paid by Pullman Incorporated
and predecessor companies

A regular quarterly dividend of seventy-five cents (75¢) per share will be paid on June 14, 1955 to stockholders of record May 31, 1955.

CHAMP CARRY
President



RICHFIELD

dividend notice

The Board of Directors, at a meeting held April 21, 1955, declared a regular quarterly dividend of 75 cents per share on stock of this Corporation for the second quarter of the calendar year 1955, payable June 15, 1955, to stockholders of record at the close of business May 13, 1955.

Cleve B. Bonner, Secretary

RICHFIELD

Oil Corporation

Executive Offices: 555 South Flower Street, Los Angeles 17, California



ELECTRIC BOND AND SHARE COMPANY

Two Rector St., New York 6, N. Y.

Common Stock Dividend

The Board of Directors has declared a dividend, subject to the approval of the Securities and Exchange Commission, on the Common Stock, payable June 13, 1955, to stockholders of record at the close of business May 13, 1955. The dividend will be payable in shares of United Gas Corporation Common Stock at the rate of 1.8 shares for each 100 shares of Electric Bond and Share Company Common Stock. No scrip representing fractional shares of United Gas Corporation Common Stock will be issued to stockholders. The Company proposes to arrange for the Company's dividend agent to handle fractional share equivalents for the stockholders.

B. M. BETSCH,
Secretary and Treasurer

April 28, 1955.

Toledo Edison reports BALANCED PROGRESS

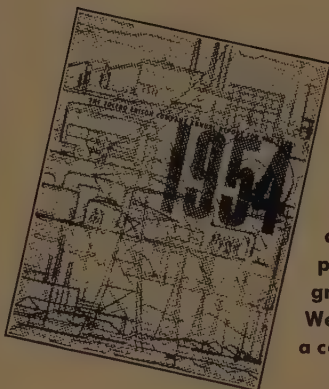
HIGHLIGHTS

We serve one of the country's finest 2500 square miles . . . more than half a million persons . . . rich farm lands, prosperous cities and towns with highly diversified industry.

Our growth continued in 1954. Present customers are using more electricity. Our Industrial Development Department—a continuing activity—was effective in bringing new plants into the area.

Our new Bay Shore station will be completed in 1955. Transmission facilities keep pace with new plant construction, insuring our ability to meet increasing demand. Sound planning provides favorable financing.

The Company enjoys splendid employee relations. Management training is an important program. We look to the future with confidence.



The progress made by this investor-owned power company in 1954 was steady and in balance in all phases of operation. Indications point to continued healthy growth. It's a good report. We would like to send you a copy.

RESULTS OF OPERATIONS

For years ended December 31, 1954 and 1953

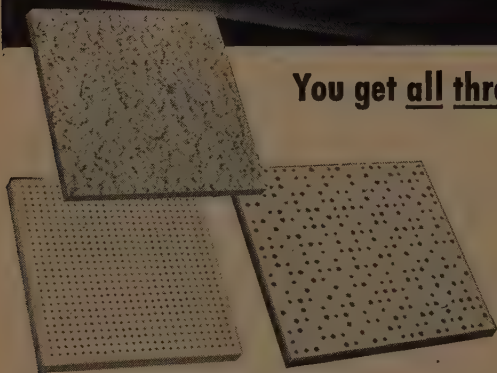
	1954	1953
Operating Revenues.....	\$34,611,996	\$33,939,073
Operating Expenses:		
Operation.....	\$14,587,569	\$15,109,350
Maintenance.....	2,315,268	2,231,189
Provision for Depreciation.....	2,776,704	2,697,472
General Taxes.....	2,681,116	2,435,060
Federal Income Taxes.....	5,106,000	4,780,000
Total Operating Expenses.....	\$27,466,657	\$27,253,071
Operating Income.....	\$ 7,145,339	\$ 6,686,002
Other Income.....	51,997	101,735
Gross Income.....	\$ 7,197,336	\$ 6,787,737
Income Deductions:		
Interest on Long-Term Debt.....	\$ 1,878,210	\$ 1,560,016
Interest Charged to Construction (Credit*).....	474,854*	144,344*
Other Income Deductions.....	38,833	41,915
Total Income Deductions.....	\$ 1,442,189	\$ 1,457,587
Net Income.....	\$ 5,755,147	\$ 5,330,150
Preferred Dividends.....	908,000	908,000
Earnings on Common Stock.....	\$ 4,847,147	\$ 4,422,150
Earnings per Common Share.....	101.8c	92.9c



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INTERESTING DESIGNS, TOO!

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*U.S. Design Patent D168,763

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1. Experience Leadership. Through 30 years of service, Acousti-Celotex Sound Conditioning Distributors—experts all—have made more installations than any other organization!

2. Product Leadership. Acousti-Celotex acoustical products are the world's most widely preferred. They include the largest variety of beautiful and modern materials on the market!

3. Achievement Leadership. There is no major sound conditioning problem that Acousti-Celotex experts have not tackled and solved!

To be *safe*, to be *sure* you invest safely—depend on Acousti-Celotex leadership in the field of sound conditioning, and the world's most widely used and best known acoustical products.

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The Business Outlook

CHAIRMAN
WILLIAM R. WHITE
Hornblower & Weeks

IT DOES NOT SEEM so long ago that I first had the privilege of presiding at one of these founts of wisdom from whence all knowledge grows. Actually, however, it was five years ago in March 1950, and I want to read to you, from *THE ANALYSTS JOURNAL* of that date, a paragraph from the Proceedings of that Convention, just to serve as a reminder of how far we have gone since we moved uptown from Schwartz Restaurant for these Annual Conventions. This paragraph is from the "Outlook for the Stock Market" resume that appeared in *THE ANALYSTS JOURNAL* in March 1950:

"Friends, this is a red letter day. Our migration uptown marks a milestone in the short history of the National Federation. It signifies our advance to the Big League. In recognition of this growth, your committee has chosen a regular full-time lineup for the stock market forum. I feel sure that, after you have partaken of the feast to be placed before you, you will agree that this function alone is worth the price of admission." Well, that goes today, too.

Now I want to present to you the speakers for the day. One is a nationally known lecturer, and, when I invited him, I was sent two or three pages of historical and analytical notes. Fortunately, I left them on my desk; so I don't have them to refer to. But, for the record, I can tell you a few things that have not appeared in print.

I remember him many years ago when he began his newspaper career. He walked into the office of the old *New York Tribune* late in the afternoon, sat down at a typewriter, and pounded out a couple of paragraphs to make about a stick of type as a lead to a foreign exchange table that used to appear in the daily press in those days, and, upon finishing that chore, he took his hat and walked out. That was his job for the day. I looked at him and I said, "Boy, he's going places, a fellow that can get away with that."

Within a few years after that, he was financial editor of the *New York Tribune*. He shortly afterward went to the *New York Evening Journal*, as it then was known, to establish the financial department there. Today he is writing a column for the International News Service, published daily in the Hearst papers, he travels extensively, debates with politicians the world around, and is really an authority on the subject, "The Political Outlook." It gives me a great deal of pleasure to bring to you the nationally known lecturer and economist of the International News Service, Merryly Stanley Rukeyser.

Another of our speakers will talk on "The Outlook for Labor-Management Relations," and I am sure that you will recognize him as an authority on his subject. He formerly was president of the Chamber of Commerce of the United States, and I am sure he is known to a great many of you, for he has spoken in many, many cities in which the National Financial Analysts Societies has representation, and he has addressed many of the individual groups.

It is a great pleasure to bring to this Convention my friend, Herman Steinkraus, president and chairman of Bridgeport Brass Company.

Our other speaker is Philip J. Fitzgerald, who had the good sense to get his education in Harvard and to listen even to a former *New York Tribune* editor who told him where to go. That reminds me that a *New York Tribune* editor once told me where to go, and I recollect that the direction wasn't due West. It was after your time, Merryly.

May I quote just briefly from that periodical I mentioned before, because, for the first time, I think I am going to read an introduction from a speaker who spoke at one of these affairs before. He says here:

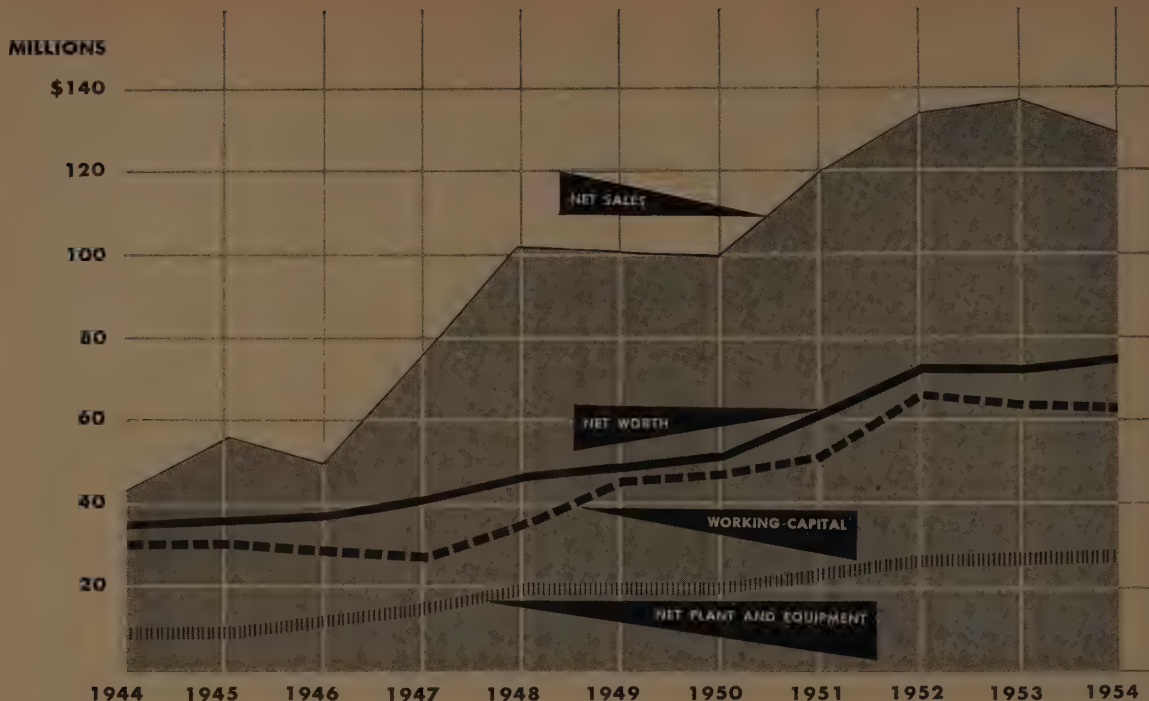
"It gives me a great deal of pleasure to bring to you an illustrious predecessor as the writer of Hornblower and Weeks Market Letter.

"Mr. Fitzgerald graduated from Harvard in 1923 and from Harvard Business School two years later. After a short time in operating a Boston Stock Exchange seat, he joined Lehman & Company in New York, and then came to Hornblower and Weeks in 1927 and wrote the Market Letter from 1928 to 1931.

"He headed the statistical department in 1934, and then went to California and opened a gold mine in a county out there, apparently just another hole in the ground like so many others. He decided, therefore, to stay in California and has been connected with the firm out there. He is head of their analytical department since 1928, and has been a partner of Dean Witter & Company since 1940.

"In 1941 he joined the service, served in the Chemical Warfare Service, and became a lieutenant colonel. Essentially his work was that of a comptroller, and he was awarded the Legion of Merit in 1945. The records indicate he is the only statistician to win the Legion of Merit in the Army."

It is our great pleasure to bring to you our old friend from the Golden Gate, Philip Fitzgerald of Dean Witter & Company.



ESTIMATED RESULTS — FIRST SIX MONTHS 1955 AND 1954

	SIX MONTHS ENDED APRIL 30, 1955	SIX MONTHS ENDED APRIL 30, 1954
<i>Net sales:</i>		
Regular products	\$48,267,000	\$39,479,000
Defense products	20,755,000	22,353,000
Total net sales	<u>\$69,022,000</u>	<u>\$61,832,000</u>
<i>Provisions for income taxes and renegotiation</i>	\$ 4,006,000	\$ 1,295,000
Net earnings after taxes	2,865,000	1,209,000
Earnings per share of common stock	\$1.29	\$.50

Progress



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The Political Outlook in Relation to Business

MERRYLE STANLEY RUKEYSER*

I DO NOT MIND your using this forum to disclose my early history, but, when I was financial editor of the *Tribune* at 23, I did not realize I would have to pay for it in my 50's, because some thirty years later, people think I must be as old as Methuselah. I am over-age, obsolete, and should be laid aside. But I get a little heartened from remembering what my late colleague, Arthur Brisbane, used to say, "Nowadays they retire fellows when they first begin to learn what it's all about."

NOT TOO MUCH ENCOURAGEMENT

In those early days that Bill White was telling you about, we didn't have 1,500 security analysts meeting in conclave to swap notes about the financial and investment outlook. When we tried in those early days to befriend the small investor, whose chief enemy was his own greed and avarice, we did not get too much encouragement from the high-hat houses in the financial district.

They wanted only customers who came with a letter of introduction, and the others went to "bucket" shops and to "blue-sky" dealers. But now we have wisdom on an organized basis, and it certainly is a great privilege to be able to talk to so learned and thoughtful a group.

Usually when I talk to syndicate managers, they tell me how many millions of people are exposed to their writings, or, when I talk to network TV and radio executives, they tell me how many millions are listening. They are not entirely analytical. They overlook the free-choice opportunity that the public has of switching to another station when anything that might be beneficial to them is put on the air. But that is fortunate, because otherwise we would have an impasse in the markets.

I was talking to the Press Club in San Francisco about three years ago, to a group of newspapermen, and they are rather cynical. When we got all through, they had a question period. One fellow said, "Are you going to alert everyone this time when to get out of the stock market?" And I have been thinking about his question ever since.

If anyone had the wisdom to know when the momentary top was, and if he had enough following for everybody to listen to him at the same time, he would have the darndest jam at the stock exchange that the world has ever known, because the very essence of an open market is the difference of opinion between buyers and sellers.

When Bill introduced me, he tore up his notes, and he forgot he had only given half the assignment in announcing my subject. He said I was going to talk on the "Political Outlook." He asked me to talk on the "Bearing of the Political Outlook on Investment and Business," and I am going to talk on the original assignment.

By the way, with the courage of youth, I had a very gratifying experience with Bill White. I had around me

a number of financial specialists when I took over the job at the *Tribune*, and I wanted someone who could read and write, and so on. I heard very nice things about Bill White, who was on the copy desk of the old *Tribune*, and I figured I would wave in his face the possibility of working day hours instead of night hours.

But he kind of bowled me over when he said that, with the standard of living he had set for himself and his family, he wasn't satisfied by that one job, that he was also copy reader in the daytime on the old *Telegram*. So, with the courage of youth, I weaned him into the new work by saying, "Well, I will make a specialist out of you, and you will earn more on one job than in two jobs." That was the best forecast I ever made.

If you were to ask me before March 4, 1933, what the impact of domestic politics was on investment and business, I would say, having analyzed the annals of business between the Civil War and 1933, that the effect of an election as between the Democrats and the Republicans, tweedledum or tweedledee, would be a minor factor, a less important factor than many others on the trend in business and finance. My studies indicated that neither the Republicans nor the Democrats had any monopoly in that interlude between the Civil War and 1933 on either what we call prosperity or depression and unemployment.

But, in 1933, a new element was introduced into the situation—the free-choice economic society. I prefer to refer to it as "free choice" rather than "capitalism" or "free enterprise" or any of the usual cliches, because "free choice" refers to the liberty of the customer to select goods and services of his own choosing, and the liberty of the worker within the framework of his aptitudes to select jobs of his own choosing. And I think this "free-choice" designation highlights the uniquely characteristic elements of our business system.

I would say that before March 4, 1933, whether the Republicans or Democrats got in was a minor matter as it bore on the outlook for security prices. But since that time, a new ingredient has been injected into the national scene—we have developed a political atmosphere in which the enterprise system itself has been an issue.

Now, that statement will be controverted, because nominally, especially in these days of the cold war, when socialism and communism are dirty words, no one in political life in the United States designates himself a Marxist or a socialist. Before the elections two years ago, when the cold war was already on the scene, it was becoming fashionable for those dissenters from our free-choice economic society to refer to the type of system that they espoused as a "mixed economy." In debates with Marxians and others, I used to pick my own phrases and call it a "mixed-up economy."

But be that as it may, the nature of the economic sys-

*Nationally syndicated economic columnist for International News Service.

tem itself has become a political issue. Nominally, everybody is for free enterprise; even Henry Agard Wallace—you remember him—was for free enterprise if—and his *if* was—if it would at all times produce full employment and a high level of activity.

Well, that is like saying that you are for this human body that the Lord gave us when we entered the world, provided it always stays well, never catches cold, never gets measles, chicken pox, or polio, or any of the other diseases to which the human flesh is heir.

So, I say that PAC, the CIO, the League for Political Democracy, all these fellows give lip service to free enterprise, but they all put a *but* on, and the *but* is more significant than the profession of loyalty to the system.

Mind you, from my viewpoint, we are not frozen to this system or to any other system. As a free people, we have the perfect right to choose, and, personally, I do not want to make the choice difficult by subsidizing my views with any Federal laws that make it illegal for anyone to differ with me.

FREE MARKET IN IDEAS

I believe in a free market in ideas. I believe that we should examine alien systems with the utmost freedom.

I thought it was a scandal when a couple of months ago the Post Office announced we could not subscribe to *Pravda* and *Izvestia* because they were subversive. If we had subscribed and if we had the ability to translate from Russian to English, we would have had a tipoff that Malenkov was on the way out, because it was all spelled out in advance in the differences between those two newspapers.

So, mind you, when I am talking about a free-choice society, I concede to my fellow citizens the right each year to re-examine their choices and to do it voluntarily. I do not want any little commissars in or out of Congress, or in or out of the Federal departments, to make our decision for us, because, the moment we do that, we kill the nature of our system which makes it uniquely successful.

We have a President in the White House now who was not my candidate. I want to be frank. I am going to talk as an analyst, not as a politician. I personally would have preferred Taft or Byrd.

But we have in the White House a man who combines with the stature of the military hero great enthusiasm for this free-choice society. Whether that is a historical accident or not, it is a moment of tremendous opportunity for those of us who are trying to build a stronger America. And I think it is outrageous that, in the spirit of headlines, instead of in the spirit of analysts getting at the inner realities, they have been saying from coast to coast that this man is just a "Republican New Dealer."

Well, he has retained social security, guarantee of Federal deposits, certain revisions of farm relief, and some of the other measures that are associated with the previous two decades, but his points of difference from his two immediate predecessors in the White House are much more significant than his points of similarity. If I had an hour or two, I would develop that thesis for you, but I will just sum it up in headline terms.

Number one—and this will strike home to you and to

me who have a feeling for scholarship: I emphasize his different attitude toward professional analysts. I was shocked a few years ago when that former judge from Missouri who got into the White House—Harry S. Truman—sent a note to my friend and esteemed colleague, Dr. Nourse, who was then chairman of the Council of Economic Advisors, and instructed him to go around to the different politicians in the Cabinet and elsewhere in Washington and find out the views of the Administration on inflation.

I wrote a signed editorial in which I said, "Dr. Nourse is on the spot," and that I recalled such an insolent statement by a politician to a scholar reminded me of the time when Alexander the Great said to Aristotle, the teacher, "Now, what can I do for you?" and Aristotle said, "You can get out of my light."

In the midsummer of 1953, the downturn in the economic indexes began to appear, and it is now history. We can say that the downturn ended about a year later. But, in the early days of the downturn, it was touch and go as to how significant the change in trend was going to be. In other words, if you are blindfolded and start walking down a slope, and haven't been on it before, you may have judgment that it is a slight slope, or judgment that it is a very deep mountain.

DOWNTURN WAS MILD

Well, the economic advisers of the President, Dr. Gabriel Hogue, and Dr. Arthur F. Burns, and others, told the President that, in their opinion, the downturn was mild in character, and would be relatively short in duration. But they had the intellectual honesty to say to him that there is always the risk that it might spiral into something worse.

Well, the President, who was used to taking calculated risks, took a calculated risk of tremendous significance. He took the view that his economic advisers knew what they were talking about. It was sort of a new approach. He did not tell them in advance what to recommend to him.

It took great courage not to turn on the wheels of inflation again after we had just begun to resist them. It took great courage not to have a demagogic tax bill in which we took purchasing power, according to some scheme, away from the little fellow. It took great courage not to turn on public works in the usual way and so alienate and frighten enterprises and investors in such a way that we would offset any benefit from the pump priming.

All you have to do to see what I am talking about is to look at the statistics of 1939, the last prewar year, and the low level of capital expenditures by industry, which was an index of lack of confidence in the persons who were temporarily in charge of the administration of Federal affairs. And, if you relate that figure to the unemployment in 1939, you will find that the New Deal, which was an improvisation, a quarterback technique, had not been working, that it was not achieving its goals.

So I say that, in facing an election next year, those who are interested in foreseeing the future, in forecasting the trend of events, must recognize that finance and industry have a stake in having in Washington, whether in the form of independent Democrats such as Byrd of Virginia or

Outlook for Labor-Management Relations

HERMAN W. STEINKRAUS*

THE OUTLOOK for labor-management relations, I think I can say in brief, is very good. There is no group in the United States that knows better why it is good than you, because you realize that so many of the factors involving labor-management relations are more favorable today than they have ever been before. You know charts and you know figures, and so I am not going to have to refer to gross national product, and the full employment, and the demand for automobiles and homes which exceeds all previous expectations, the high wages, and the fringe benefits which a manufacturer like myself is very much more aware of when we look at the figures for the year than the unions will ever mention.

Fringe benefits are beginning to be a very large part of the pay that people get. What with free hospitalization and free surgical benefits, and all the other things that add into it, it makes a very long string.

It reminds me of the days when Germany was under Hitler's power and we were making about six, or eight, or ten deductions from people's pay envelopes. We do not make so many deductions any more. We have absorbed them as part of the company's cost of doing business.

And so, when we consider all these things together, plus the improvement in plants, working conditions, better lighting, better sanitation, and all the other factors, from the long-range standpoint certainly labor management relations are good, but there are still some problems, both labor and management have their individual problems, because this subject is a two-sided one.

I cannot take time to go into too many of them, but let me just mention two of labor's big problems. One of them is something that you in the West and South are more aware of than perhaps some people here in New York, and that is the great shift of the population which is taking place in the United States to the South and to West. As the population has shifted, largely as an aftermath of

*Chairman of the board, Bridgeport Brass Company.

World War II, when many young men saw what wonderful country it was in the South and the West, lots of industries have been beginning to move in those directions. And, with lower wages and less of a hold on some of those areas, the unions are considerably worried. They have tried in several ways to offset this transition of plants from the North and from the East to the South and into the West.

They have not been too successful as yet, but there are a couple of things they have been trying to do. First is to get a higher minimum wage. The \$1.25 wage would stop some plants perhaps from the North moving to the South or the West. And so, the unions have been putting up a hard battle to get the wages up so high that there is not that advantage to moving plants. On the other hand, there are some management people who were also glad to see that happen, because they do not want to see the South competing with them at those lower wages.

Another thing the unions are up against because of this move is an increased job of organizing, and they have not been too successful in organizing some of those areas, because some of the towns who for the first time have had the experience of having plants come and locate there are very definitely opposed to anyone controlling the workers in the plants other than the managements of the companies themselves.

So, the unions are having a more difficult time in organizing than they had before, and that is one of the reasons why they are doing more of the merging of unions, upon which I will speak a little later, if I find that I have the time.

Another problem, of course, which you hear most about, and which is so big that you could talk for a whole session on that one thing, is the unsteadiness of employment, which has resulted in Walter Reuther coming out and demanding a guaranteed annual wage. You must have read a great deal on this subject, and so I am not going to attempt to go into it very far.

(Concluded from preceding page)

George of Georgia, or Eisenhower, or whatnot, on the other side, personalities who believe in the free-choice economic society. Otherwise, we will be handicapped in our progress by those who make trouble under the guise of improving the system. Those who purport to want to improve the system really want to interfere with the telegraphic system whereby customers record their preferences for the businessman, and they call that interference with that intelligent system a form of "economic planning."

So, I say that the proper approach next year for those who believe in the system is to take a tip from the late William Jennings Bryan. In his long lifetime, he was only right once in my knowledge.

I wrote him just before his death when he was getting so much publicity in connection with the Scopes trial in Tennessee, to ask him his final views on free silver. He gave them to me, but said, "Don't print them now because nobody is interested in the money question in good times; they are only interested in such reforms in hard times."

Well, if next year we stay out of hot war, and if next year we have our economy on a reasonably high level, then it is important for those who believe in the system to know that it is sheer obsolete technique to refight the battles of the '30's which were depression battles. The public is not interested in the issues of the '30's in a time of large-scale employment and expanding business.

But this is perhaps the biggest chunk of demand that has ever come across the pike. It is so enormous that, should anybody steer into it unwittingly or unwisely—should, for instance, the automobile industry, who might find it possible to pass on the costs to the public, start off in that direction—there are many, many industries and thousands of firms who could not possibly follow and would find themselves in a very difficult position.

Mr. Reuther says that this is not a guaranteed annual wage; it is a guaranteed annual employment plan. So far, he has not drawn up any specifications of exactly what that plan is.

You can read about this in the CIO-UAW publication. The issue of February, I believe, had about 60 or 70 questions as to what he had in mind, which were answered, but the actual plan that he may be demanding I think has still to appear when the actual negotiations come up.

That really is a demand that industry shall pay a supplementary employment insurance above the social security payment to all employees for the time that they do not work, with certain limitations as to seniority and a few other provisions. The reason, I believe, that the demand came from the automobile workers is that that industry, unfortunately, over many years has had the most unstable unemployment.

I am a Cleveland man, and I saw this happen. I used to travel in the Detroit area. Every fall when models were changed, there were tremendous layoffs. People flocked back to the farms in Kentucky, and in West Virginia, and southern Ohio, and Indiana, and stayed on the farms until the new models were coming out.

They then flocked back and went to get a job wherever they could get the most money. This was a perfect setup for unions to organize the automobile workers.

AUTOMOBILE BUSINESS

Now, on the other hand, the automobile people have said that the biggest single thing that keeps the automobile business so large is annual models—making people discontented with what they have and getting them to buy a new car. So, here we have, on the one hand, a demand for steady employment, whereas, on the other hand, one of the features that has given such great employment and such great use of steel and electrical equipment, and a lot of other things, has been the annual model, and it is a rather difficult thing for the automobile companies to give steadier employment without establishing it at a considerably lower level.

This applies perhaps in a few other industries, too. I think the radio and television industry is somewhat in that position, but I believe that the bulk of American industry does give pretty steady employment. And, therefore, the scheme is more aimed at such spots that could be considered as sore spots. Of course, the danger of any such program would be to stabilize the whole industry at a lower level with less employment.

Mr. Reuther did the sort of thing that Phil Murray used to do. In order to give plausibility to this scheme, he brought together a group of economists and had them make a study and endorse the fact that this scheme could be made workable for as small a charge as 5 cents an hour.

On the other hand, an increasing number of these economists who were on that distinguished panel have made statements, or had made previous statements, denying that such a program ever could be made to work. For example, Professor William Haiber of Michigan said, "No one can seriously promote the payment of nearly full wages to idle workers except perhaps for a most temporary period."

And Professor Sumner Schlichter, whom you know, and you know that he is very liberal in his thinking, and certainly has been attempting to be very fair in his attitude toward unions, said in *Barron's* weekly just a few weeks ago—and I quote—"Despite the thorough study that the union has given to the matter, and despite the help which it has received from the distinguished panel of economists, the union proposal is ill-conceived."

Two of the members of his panel have said something similar. Of course, management has had to face this problem, and, though many of them have not said much, some of them have made statements, I think Mr. McAfee, president of International Harvester, made an interesting remark when he said, "Our friends in the labor unions have been greatly concerned about stabilization of income for employees, but their interest for stabilization of income for shareholders who are frequently the same people, approaches absolute zero."

No doubt, something will come from this, regardless of what the result of a negotiation may be, and I should say that some improvements can be made, because of the emphasis placed on steady employment, and that might include such things as diversification of product. Instead of having such a seasonal situation, one should have a balancing of production within a certain plant. If one has a very seasonal product, there may be another product available to fill the off-season. One should avoid very sharp increases in employment at peaks, in order to avoid the contrary sharp drop in employment that is bound to occur after the peaks, and a very much more careful scheduling of production and plants might be possible.

GUARANTEED ANNUAL WAGE

I would like to summarize what I have to say about this guaranteed annual wage, with a quotation from my good friend Dr. John Steelman, whom you know. He has handled over 10,000 strikes, incidentally is a director of our company today, and was at the spring economic panel here in New York on the 21st of April:

"Guaranteed annual wage negotiations are not expected to result in a strike in the automobile industry. Reasons: High automobile inventory means industry could take strike in stride; on the other hand, large strike reserve funds collected recently at \$5 a month extra means unions could finance a long strike. Combination of these factors spells stalemate which neither side wants. Probable result: Both sides feel they might as well settle early, and probably will. No strike in steel either, but possibility of early amicable settlement."

I agree with his judgment. I do not think that there is much of an atmosphere for a strike in the United States today. We are all feeling rather optimistic, and I think the workers are just as human as the rest of us, and that there

will be marked resistance from employees against any union that tried to lead them into difficulties.

There are some other problems, but we certainly haven't much time left. I just want to mention a few new developments in unions which maybe you have observed.

In the first place, the older union leaders are gradually disappearing from the scene. They were the fellows that were the real battlers; they were the bitter men because they had the uphill fight. They are gradually disappearing by either death or retirement, and are being replaced by younger, less bitter, better-educated men.

I think the fact that the union membership is not growing very much explains the reasons for these efforts at mergers, which are now taking place in a number of directions. The Government attitude toward unions, as Mr. Rukeyser has indicated, has changed somewhat.

They are no longer the darlings of the Federal Government, and it is hard for them to take. They have been a little bit spoiled in the last twenty years, and you have to expect that they are going to do a bit of crying.

The unions are aiming toward greater political power by these mergers, and I think one of the reasons is the one I just mentioned that they are no longer the darlings of the Government, and so they may think they should show their force by uniting and being more active politically.

FACING A LOT OF CHANGES

Now, management is facing a lot of changes. Managements too are facing mergers partly to overcome this business of a one-product plant, for purposes of diversification, for purposes of lowering costs, for purposes of strengthening their organizations, and this still seems to be well before us and going on.

There is a great improvement on the labor-management angle among industries in the type of trained personnel men and negotiators that they now have. There was the early period when managements would call up their lawyers and tell them to negotiate with the labor unions.

That in most cases was a very sad mistake because labor-management relations are basically human relations and not legal relations. Only the lawyer who has a very clear understanding that the basic negotiation cannot be legalistic, is the one you would want to have in on negotiations.

I think there is a very much better recognition today on the part of management of the necessity of staying close to their employees. There used to be a time when, if the manager had a union in his plant, he would get annoyed if a worker came to him and asked him for something, and he would say, "Go to the union for that." That was the worst thing he could possibly do.

The management doesn't do that any more. They welcome the worker to come in, and they stay close to the employee in any well-run plant.

The recognition of the importance of good community relations is in its infancy, but it is basic. I think that no plant can be successful if its community is sick.

No plant can attract good men for its executives and for its help where the community is poor. And that management which is enlightened enough to help build the community into one that attracts people and makes people happy to live in it and raise their children there, that has

good schools and good social and other activities, that make the place interesting—that plant is building for the future.

Of course, the harder the unions push, the faster it is necessary for companies to improve their plants and equipment, and so even the word "automation" is being used a great deal, although we have had what might be called automation for a long time; it is just becoming more intensified.

I think managements are also realizing that the cost of a strike is a terrifically big one. There used to be the days when management used to think: Let them strike. It will teach them a lesson—only to find out that their own showing, and their own excuses before groups like yours as to why they had a bad year, did not go over too well.

In other words, a bad year caused by a strike is an awfully hard obstacle to overcome. It takes years to heal the wounds that have been created. And so, more and more, greater efforts are being made on both sides of labor-management to avoid the expensive strike.

I do not mean to give you from this brief talk the idea that everything is sweetness and light. We surely will expect greater demands all along the lines from unions because of the very profitable condition of business, but I believe they will be fewer, I believe there will be fewer big ones, and I do not believe they will last very long.

Someone asked me how it came about that our company, in an industry that has been fraught with strikes for many years, should have had a record of ninety years without strikes. I cannot tell you about the whole ninety years. I have only been there thirty.

And there certainly is no guarantee that such a record cannot be broken. It has been right down on the block a number of times when we have had to say to employees: "Of course, if you want a strike, you have a right to have one. But you want to be very sure that you have your say if you want it, and do not let some little group of 100 or 200 men go up to the union hall and say you are on strike. You make them put the ballot boxes somewhere where everybody has a chance to vote. And you want to consider pretty carefully just why you would want to strike."

COMMON SENSE OF AMERICAN WORKER

And the good common sense of the American worker is something that we too often fail to realize. He is just as able, and just as fair, and just as desirous of making a success as any member of management, but you have to keep him informed.

I suppose the simplest explanation I can give why our company has gone along without strikes is one that was given me by the editor of a very strong labor paper in our state, which the newspapermen will readily recognize, after we had come through the worst tussle we have had at any time with the union leadership. They had moved the president of the International Union and his goon squads into the town of Bridgeport, and had declared that they were going to get the company, and get me, and break that record—which they did not do.

In fact, the chief of police escorted the president of the union out of town because he was afraid that our employees were going to tear him apart. We no longer have that union. When the Taft-Hartley Law came along, we

bounced that union out. That was the Mine, Mill, and Smelter Union of Denver, Colorado.

This editor had been very fair, and normally would side with labor, but he definitely was against anything communistic. I invited him over for a little luncheon at our office to thank him for what he had done, and he said: "I want to give you the way the thing looks in my mind. A lot of men in this town, who work for a living, go to the bank every week and they put a few dollars into a savings account for a rainy day. And some day, when the emergency comes, they find they can go to the bank and draw out enough money to pay for the special operation, or for the extra baby, or whatever the case may be.

"Now," he said, "you have been building up a bank account in your company day to day, of good will—of good will with your employees, of good will with your community. When the emergency came, and the crisis was there, you were able to go to that bank account of good will, and you found that there was enough balance to offset the crisis."

I think that is a point we should remember. We have to work at good relations every day of the year, not only with our workers, but with our community also.

We are not a very large company. Our total employment is less than 10,000 at the present time, and we are in several important cities. About a year ago we took over a large plant up in Adrian, Michigan, which was called a white elephant by everybody in the aluminum industry. Over a period of twelve years, since the end of the war, five different operators had taken it over and given up in disgust.

The principal difficulty was the type of union contract they had there with the UAW. We, perhaps being babes in the woods and anxious to get into the aluminum business—we had been in the brass and copper business and we had decided to get into aluminum—felt that this was a great opportunity for us to do something, if we could possibly, take our ideas about labor-management relations right in the shadow of Detroit and make it work.

Well, it is too long a story to tell you. We certainly had some exciting times. It wound up within 48 hours from the time we came there, with a mass meeting called by, of all people, the Council of Churches of the Town of Adrian, and they invited the management and the union's leadership to come there and talk.

They asked Walter Reuther to come or send a delegate to speak for the UAW, and he said that the Council of Churches had no right to meddle into these affairs, and, therefore, there would be nobody authorized to speak for the union. But the management did persuade their president to appear, and I told him what was involved in making a successful town. It's jobs.

The biggest single thing that makes our country so great is good jobs for our people, good income for our people—this free-enterprise system of ours where you can go wherever you want to go, and work wherever you want to work. But you have to have the atmosphere in a community that will make management come in and put money into a plant to make it go.

It seemed to me that it was a serious reflection on this

town that its biggest single plant had been a flop for twelve straight years, and that five different companies had come in there and had to give up discouraged. And here we were knocking at the door, willing to take a chance. But we felt we needed the help of two important elements.

First, the towns people. They really had to want that plant to be a success. They really had to realize that it was a disgrace to them to have the biggest plant in town idle, and they had done nothing about it. They had to realize that their young people, their children, had to go elsewhere to get jobs, because their own home town did not have the right atmosphere in which a company could be successfully run.

Second, the union. Instead of throwing out an unworkable contract and starting with something that could be worked, if they had put their shoulders to the wheel and helped management, a plan could have been worked out by which their seniority meant something, instead of having a fake seniority that they had worked there for twelve years off and on for different companies, and insisting that the newcomer should take over all that seniority.

Well, it was really difficult. I finally said that I could see only one reason why the union was trying to make it hard for us: that we had had an eighty-nine-year—this was last year—no-strike record, and they thought that by threatening us with a strike, they could get whatever they wanted.

So I said, "I want to tell you something. If, in order to function on a sound foundation it takes a strike, then this is the town and now is the time." And I sat down. In about a half minute, the applause broke.

A little later in the question-and-answer period, a white-haired old man came down the center aisle up to the front where there was a microphone. He said, "I knew I shouldn't have come tonight. I knew if I'd come I'd talk, but the radio has been full of this argument, and the newspapers have been full of the story, and I had to come."

"Now, he said, "you all know who I am. I have been the lawyer of this union since 1937. I fought your battles when nobody else was for you. I have been sitting here listening to this man talk, and it makes a lot of sense to me. The best advice I can give you is to go ahead and bury your troubles, and put your shoulders to the wheel, and make this plant a success. When I think of Adrian, a town of 25,000 that used to be as big as Pontiac, and Flint, and other towns, maybe we have been missing out because the people in this town have not cared enough to make this town successful and a place for companies to come and invest their money and make a successful proposition."

Well, my time is up. All I want to do is to say in closing: The idea that business is impersonal is pure fiction. Men do not change their nature when they put on their business suits or working clothes. Economic life today is interdependent.

There is no economic man motivated only by thoughts of gain. We are human beings. Labor-management relations are human relations, and, if you are fair to the other fellow, it is surprising with what gusto and with what pleasure he meets you half way. So, I say, labor-management relations are good.

A Positive Investment Program for 1955-56

PHILIP J. FITZGERALD*

I WANT TO TELL YOU how much I appreciate the honor of addressing you. Today's market is far harder to appraise than the market in March 1950, which was so inherently cheap that it was easy to foresee the 50% advance that lay ahead. In April 1953, the aircraft shares seemed so cheap that it was easy to bypass the market for the bargains that could be found in that group.

I am sorry I cannot bring to the attention of today's meeting a comparable group of investment leaders which are selling at only two to three times the earnings that are in sight for 1956, and whose next year's dividends will provide yields of between 20 and 40% on today's prices. Before considering the market's prospects, I should like to establish:

1. The essential differences between the stock market today and the market in 1929.
2. The well-informed and permanent character of the cash buying which has carried the stock market forward in the 1950's.
3. The essential fairness of today's investment values, even though they seem high compared with the bargain prices of the early postwar years.

TODAY VERSUS 1929

The initial or domestic phase of the great depression was ushered in, as much by the chronic depression of our agriculture and the speculation in real estate as it was by the much-publicized speculation on the stock market. Agriculture suffered all through the 1920's from two unresolved problems.

First, the prices of major farm crops were set in the declining international markets. Second, the rising cost of labor made it necessary to mechanize, which meant that a shift from small-scale to large-scale farming was inevitable.

During the last twenty years, the mechanization of farming had been accomplished. For all of its faults, the AAA has tied farm prices into our domestic price structure so that the threat of a recurrence of bankruptcy farm prices, pulling the entire economy into a depression, was eliminated.

In the 1920's, homes were built with the use of burdensome second and third mortgages, and very serious speculation took place in the commercial real-estate market. During the depression, widespread real-estate defaults were experienced which critically embarrassed our banking structure.

This danger has been eliminated since there has been relatively little commercial real estate built during the postwar period, and the tremendous homebuilding boom has been financed by self-liquidating first mortgages. Although some real concern has been expressed over the laxness of the present home-mortgage terms—particularly the

nothing-down, thirty-years-to-pay, Veterans' loans — the weaker real estate loans all carry governmental guarantees. Although defaults would embarrass the Administration, they would present no critical danger to the structure of the banks in 1955 as they did in the early 1930's.

I should like to point out the absence in 1955 of the prospects that world finances may become involved in another crisis similar to the one that nearly throttled capitalism between 1931 and 1933. The fundamental reason for that crisis was the fact that such uncollectible public debts as the German reparations and the French-English war debts were given legal precedence over all private commercial indebtedness.

Most students of international finance recognize that these public debts never could have been collected, and even the most diehard isolationists must admit that they have not been collected. This is such an important financial point, which is so little understood, that I should like to have a full period to explain the unnecessary fiscal strangulation which nearly stifled capitalism in this country.

But it is sufficient to point out that all of our war and subsequent cold-war aid has been on a gift rather than a loan basis. If international aid were to be drastically slashed, we would cut into the boom which is occurring in world trade, but we would not at the same time be creating a banking crisis so critical that it would again strangle international trade, devalue the major currencies, and bring about such widespread unemployment as to threaten the foundations of capitalism everywhere.

WELL-INFORMED BUYING

The difference between the 1929 and the 1955 stock markets is the well-informed nature of the cash buying which has carried stocks ahead during the 1950's, compared with the gambling type of margin buying that played the major role during the 1929 boom. Whereas the theory of investment analysis goes back a long way, the practice of investment analysis stems from the passage of the Truth in Securities Act, and the Securities Exchange Commission in the middle 1930's. Between them, these two enactments require corporations to provide adequate and accurate financial data, which enables any student with an investment background to follow the affairs of a company more intelligently than was previously possible. Although the manipulation of stocks during the boom caused the greatest of moral indignation, the fundamental weakness of that period was the fact that even investors had no official way of knowing what they were doing unless they had access to inside sources of information. As far as the public was concerned, such well-placed, direct channels were not available.

They received their financial advice third- and fourth-handed at best, and, as the market rose during the late 1920's, they were perfectly content to commit their investment capital on the basis of outright tips. In fact, to a

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great extent, the reason for buying stocks required no basis of investment understanding, since such commitments were made largely in the hope the stocks could shortly be resold to someone else at a quick profit.

The basic weakness, therefore, was that stock purchases mainly were based on investment ignorance. The fact that this ignorance was manipulated in the form of tips and that it was financed with borrowed money merely compounded the fundamental weakness.

Over the past twenty years, the rise in investment analysis has been the most striking development in finance. Not only do individual investors now have a better understanding of the values of the investments they hold, but also there has arisen an entirely new member in the financial community—the professional investment analyst. His place in the scheme of things is in sharp contrast to the position of the brokerage-house statistician who was his predecessor.

According to the *New York Times*, the institutional portfolios under the direction of professional analysts now hold stock equities with an estimated market value of \$66 billion. This is about 40% of the value of the stock listed on the NYSE, and about 25% of the estimated market value of the stock of all of the corporations in the country. While this shows how important are the institutional holdings now under the direction of professional investment analysts, it should be remembered that

1. The analytical approach to investing has become the basis of the buying by individual investors whose purchases and holdings must be added to the investment totals which are influenced by that approach.

2. The analytical buying has been to the 1950–55 advance what the margin buying on tips was to the 1925–29 boom.

STATISTICAL REASSURANCE

Although the difference in the soundness in character of the buying is the essential difference between the market today and the 1929 market, there are those who must have statistical evidence to be convinced of the difference. Three particularly vivid contrasts are presented:

1. *Stocks and Business.* Between 1929 and 1955, the value of the gross national product (the Department of Commerce's estimate of the value of all goods produced and services rendered) has risen $3\frac{1}{2}$ times to a level of \$357 billion, while the market as measured by the Dow Jones industrial average has increased less than 13%. General Motors is a case in point. Between 1929 and 1954, its sales rose from \$1.5 billion to \$9.8 billion. This six-fold increase in sales makes General Motors a far sounder investment at \$97 today than it was at \$45 in 1929.

2. *Security Credit.* When brokers' loans stood at \$8.5 billion in 1929 they amounted to nearly 10% of the value of all the stocks listed on the NYSE. Far more critical was the fact that they amounted to 34% of the loans and discounts of the banks which reported to the Federal Reserve.

In retrospect, it is clear that brokers' loans had usurped too large a share of our credit resources, and that their liquidation inevitably led to credit collapse. Today, bro-

kers' loans amount to only \$1.8 billion—a sum equal to but 1.1%, versus 10%, of the value of listed stocks and 3%, versus 34%, of the loans and discounts of the member banks. At this level there is absolutely no danger of the liquidation of brokers' loans threatening either to collapse stock values or to deflate our credit resources to the disadvantage of general business.

3. *Turnover.* In 1929, when the shares listed averaged only 942 million, the trading volume amounted to 1.1 billion shares. In 1954, when listings amounted to 3 billion shares, the turnover amounted to only 573 million shares. Thus, the 1954 rate of turnover was only one sixth as great as the 1929 turnover rate, and it would seem to me that this is the best single measure of the relative degree of the speculation in stocks in these two periods.

During postwar years, investment thinking was profoundly affected by studies made of the investment results of portfolios committed to high-grade bonds, as compared with the results scored by high-grade stocks. Between 1927 and 1949, the income from bonds had dropped by about 45%, and the effective buying power of the remaining income had been cut nearly in half by the rise in the cost of living.

In contrast, the dividends received from a diversified portfolio of stocks of the Dow Jones quality had increased so satisfactorily that their larger dividends had served to more than offset the rise in the cost of living. In recognition of these realities, the laws that govern most of our states were altered to allow the purchase of a percentage of common stocks under the "prudent man" rule by private trust funds, life insurance companies, and savings banks.

These records so impressed the managers of the newly formed pension and profit-sharing funds that their portfolios were organized to include very liberal percentages of common stocks. This noteworthy development promises to continue and soon will be looked on as a "must" by all foresighted managements.

The results of this more favorable thinking has served to boost the estimated institutional purchases of common stocks from a total of \$2 million a day in 1949 to \$6 million a day in 1954. It has been institutional buying that has absorbed Korean war-scare selling in 1950 and the selling by the cyclically minded investors in 1953, when the combined tighter-money policies of the new Administration and the smaller needs of the Korean theater threatened to bring about a sizable business correction.

The 1954 market resembles the markets of both 1925 and 1935 when the advance in stocks preceded, and then vigorously participated in, the broad upturn in business which occurred during the last quarter of those years. Last November's market advance was particularly brisk, because many of the institutions postponed part of their buying needs to see how stocks would react to a Democratic victory in the Congressional elections.

When the returns were in, their favorable interpretation coincided with splendid business news so that this pent-up buying power created a veritable "runaway" on the upside. The pace of this advance was so swift that it aroused the shades of 1929, and so far has resulted in a boost in both

margin requirements and the rediscount rate and in a Senate investigation.

FAIR VALUES

Though today's stock prices seem high compared with those of the depression-minded years of 1946-49 and low compared with those of the New Era year of 1929, they actually provide eminently fair investment values. In reaching this conclusion, we have reviewed the course of the market in the five prewar years 1935-39 and have correlated a representative price for that period and the average earnings reported and dividends paid.

On balance, this was not an exuberant period, because it started with investors shell-shocked by the depression and finished with the world at war. The 1937 boomlet was offset by the 1938 recession. While the Dow Jones industrial average moved over a 100-point range during these years, we believe that the price of 140 is a representative one since.

1. It is within 3.5% of the actual arithmetical mean.
2. In about two thirds of the 60 months under review, the average sold either over 130 or below 150.

Using 140 as a representative price for 1935-39, the Dow Jones industrial stocks sold at an average price-times-earnings-ratio of 16.3 and yielded 4.5% on the average of dividends paid. This appears to be a very reasonable appraisal of what investors considered fair prices in the prewar period when interest rates averaged about their present levels.

Today, the Dow Jones industrial average sells at only 14.8 times the 1954 earnings and provides yields of 4.6% based on the probable dividend payments in 1955. Today's dividend payments amount to less than 66% of last year's earnings, whereas the 1935-39 dividend payments amounted to approximately 75% of the earnings reported for that period. Therefore, today's price levels are actually below the fair-investment value levels established by the stock market itself in the 1935-39 period, as valued by earnings and dividends.

However, from a more realistic analysis, the present-day earnings are further undervalued in comparison with those of the prewar period, since they are the earnings which remain after research expenditures that far exceed those of the prewar period, and, in many instances, they have also been penalized by very heavy amortization charges brought about by heavy plant expansion during and after World War II.

Today's earnings are understated because of the amortization charges which are allowed as accelerated depreciation at facilities built to meet the needs of the Korean emergency. For some companies that undertook major facility expansion, the amortization charges run several times the normal depreciation charges. The effect of such amortization on the reported earning power is so marked that some analysts prefer to consider their market prices in relation to the cash flows into their treasuries rather than on the basis of the earning powers that have been so minimized.

As we move into the second quarter, it seems clear that

1955 will be a record-breaking year for both general business and corporate earnings and dividends, but it may be held back investment-wise by a series of psychological factors and a very sizable volume of new common-stock financings. The principal outside factor is the fear in the hearts of many oldtimers that 1955 may be either the 1928 or 1929 of the postwar boom in stock prices.

Because the Dow Jones industrial average has advanced from 265 in September 1953 to 430.6 in April 1955, the scope of the advance may well presage a technical reaction. It is not surprising then, that we have already witnessed two such wide swings as investors, fearful of a repetition of 1929, threw their stocks overboard in January when margins were raised, and again in March when the Senate investigation was in progress.

It is significant that the April boost in the Federal Reserve rediscount rate brought about very little liquidation, which would seem to indicate that the 1929-minded have run out of stocks, at least at current levels, even though further tightening of money rates may influence the market later this year. The ability of the market to absorb the General Motors' stock offering during the unsettled trading in March indicates that new stock offerings can be expected to retard the advance of the market, rather than unsettle stock prices.

In the months ahead, it is quite possible that the stock market will be faced with a showdown in Formosa and a labor crisis over the guaranteed annual wage. Never before has an international crisis been so widely considered as Formosa, but I, for one, have relinquished my earlier concerns and now agree with the stock market's attitude.

This indicates that this crisis will be minimized just as the Indo-China crisis was minimized last year. The same type of reasoning holds for the guaranteed annual wage, which has received so much publicity that the market's lack of concern would appear to indicate that investors generally are expecting a skirmish in 1955 rather than an all-out conflict.

Because Britain considered it necessary to raise its rediscount rate by 1.5%, some investors have feared the possibility that the record-breaking totals of international trade may be going to diminish. It should be recognized that the British action was taken to curb inflation at home rather than to curtail world trade. Therefore, it would seem that, so long as the United States goes along with a substantial international-aid program, there is very little likelihood of international commerce falling to a point that would have serious repercussions on the level of American business.

On the domestic scene, it is quite possible, now that real-estate mortgages have passed the \$75 billion level and total consumers' credit the \$30 billion level, that the Administration will seek to curb their rapid rates of advance. If it does so decide, it will curb them by higher money rates just as it did in the 1953 inventory boom. Just as in 1953, it is practically certain that these curbs will be ended as soon as the boom tendencies are relaxed, since

1. 1956 is an election year.
2. The installment loans, which amount to only 12% of the disposable national income—about the ratio which

caused no particular concern in 1940—cannot be considered critical.

3. The demand for new homes has continued to be amazingly strong, so that the only vacancies are in obsolete or submarginal housing no longer acceptable by the present-day living standards.

In view of the mildness of the 1949 and the 1953–54 business setbacks under the cushioning of cheap money, it does not seem likely that the market will be willing to liquidate itself to any substantial degree in anticipation of the temporary credit restraints that may be in prospect.

REAPPRAISING THE PRESENT

Bernard Baruch has often noted that the Latin verb "speculare" means to observe. Therefore, in considering the longer-range future, it seems most advisable to anchor one's investment forecast to the compelling shift which has been observed to take place in business psychology over the past two years. President Eisenhower's leadership is primarily responsible for this shift toward realistic optimism on the part of business leaders. Without turning back the clock on social progress, his sensible administration of the controversial laws and policies which he inherited has served to reconcile most business leaders to them. His leadership has given them

1. The hope that peace can be maintained through our strength in the air—even though on this basis "security shall become the sterile child of terror."

2. The belief that we are winning the cold war, since the economic recovery of Europe makes it unlikely that communism will take over by subversion, and far less likely that a military adventure will be attempted either before or after Germany rearms.

3. The intuitive feeling that similar measures may in time work out in Asia, since we can offer those backward people greater spiritual and material aid than the Communists can.

4. The realization that nearly 90 million American people belong to the owner class of families, up from 10 million at the turn of the century. By owner families, I mean families which are well fed, well housed, well clothed, and whose buying power makes possible the phenomenal sale of cars, appliances, and medical services which makes our living standards the marvel of all history as well as the envy of the rest of the world.

In addition, these owner families have an unprecedented degree of protection through life insurance and have become owners of equity stocks, either directly or through their pension, profit-sharing, or insurance funds. They enjoy unparalleled working conditions, a 40-hour week, vacations with pay, and job security. It is this remarkable living standard, which these 90 million fortunate people have won over the past fifty years that has made complete nonsense of Karl Marx and his degrading philosophy and prophecies.

5. The recognition that socialism has joined fascism on the junkheap of world opinion. Britain, France, Germany, and Italy are presently governed without socialist support, and in our country the leading socialists are publicly recanting their errors as they run for cover.

6. The satisfaction of witnessing a real relaxation in the domestic political tensions, with the moderates in control of both parties—embarrassed rather than dominated by their extremist colleagues who less than a year ago seemed to be in much more commanding positions.

7. The understanding that the huge wartime increase in productive capacity no longer threatens us with overproduction, but is needed to supply the huge mass-buying power that has been building up over the past twenty years.

8. The conviction that future business corrections can be limited both in extent and duration, because

(a) The mass-buying power, buttressed by various governmental supports, was so well sustained in both the 1949 and the 1953–54 business corrections.

(b) Better fiscal controls exist, under which the Federal Reserve has tightened money to curb unwarranted boom tendencies and has eased money rates to cushion the subsequent periods of readjustment.

A STIMULATING OUTLOOK

This new sense of reassurance may not prove to be fully warranted over a long period of years; yet it has already filtered down to investors and has provided a great deal of the buying philosophy that has made possible the new 1954 advance. Business leaders are now turning the satisfaction with the present into optimism toward the future.

The fundamental basis for their optimism is the dawning of the atomic age, the trend toward automation, and the tremendous growth in our population that can reasonably be expected over the next ten to twenty years. Limiting our thinking to the next decade, it now seems clear that we will see our population grow from 162 million today to well over 190 million in 1965. This increase in itself will expand our mass market by 20%, and, if it continues to be accompanied by a normal improvement in our living standard, the beneficial results will be compounded.

Enticing predictions of President Eisenhower's economic advisers are influencing almost every major line of industry, and dynamic business leaders are planning to meet our expanding economy with improved technology, which will provide both better and cheaper products, on which they expect to make larger profit margins than they are enjoying today. Just as their confidence was reflected in investment psychology last year, it is almost inevitable that their growing optimism for the future will, in due course, be reflected in investment psychology.

This prospect is made rather certain by the fact that the continuing institutional demand for investment-grade stocks is still in excess of the available supply of these shares. Even if this institutional buying is postponed, it will provide an extraordinary structure of support under the market and probably will result later on in extraordinary buying pressures such as we witnessed last November.

REALISM

Each period of extreme market tension has been preceded by a prolonged period of unrealistic investment caution. The years 1922–24 were preludes of 1928 and 1929;

1934 was a prelude of 1937; however, neither of these periods compared with the unrealistic caution of the years 1946-49.

Probably the easiest way to measure the extent to which this overcaution has become discredited is to consider the fall in prestige which Mr. Sewell Avery has experienced. By far the most persuasive preacher of the inevitability of a postwar depression, he practiced the caution which he preached, on an historic scale.

In 1955, Mr. Avery finds himself fighting for control of his mail-order empire. In the course of this struggle, he has finally authorized the building of his first postwar retail store and has had to sign his first contract with union labor. Based on past precedent, the repudiation of Mr. Avery's caution will be a strong factor in refuting future warnings of caution from whatever source.

Before the forces of optimism can be expected to take over, we believe that the market will be restrained by the combination of critical outside factors and the prospect of the Administration stepping up its measures of restraint. These external forces can last for only a definite period, and it is my guess that their restraining influences will be on the wane by the time it becomes certain that Ike will be a candidate for re-election. Once that fact is clear, the market will focus its attention on discounting the future—which is another way of saying that it will put an enthusiastic valuation on the accomplishments of the present.

THE PAST AND THE PRESENT

To arrive at some measure of what an enthusiastic valuation may mean, it is well to review the past and the present. Certainly the market was selling at a pessimistic valuation in June 1949, when the Dow Jones industrial average sold to provide at 7.5% yield, in contrast to the interest rate which was only 2.8%.

Its present 4.6% yield is certainly a fair one as compared with the average of the prewar years, and compares with the current interest yield of 3.1%. It would be my best guess than an enthusiastic evaluation of the Dow Jones industrial average would carry the yield to within at least one half of 1% of the interest rate—which would mean a drop of 1% in their dividend yield.

On this premise, I would expect the Dow Jones industrial average to advance to a level of at least 550 by the time President Eisenhower attends his second Inauguration. Since it is not unlikely that earnings and dividends may both expand next year, and that enthusiasm may become more pronounced, it is quite possible that the overall advance will be of greater proportions.

INTELLIGENT RESTRAINT

Even though the prospects favor a very important advance in stock prices due to an investment willingness to discount the favorable prospects of the future, it certainly is not the time to "Be brave, bold, borrow, and buy," since

1. Stocks are no longer at such bargain levels that the mere passage of time practically guarantees a substantial profit.

2. The combination of outside developments plus Administration restraints is bound to raise doubts in the

minds of those who are not convinced of the values of the stocks they are holding.

3. Ike possibly may not be available as a candidate in 1956.

I would like also to caution this audience against being stampeded into a form of New Era philosophy when, as, and if the market decides to price itself enthusiastically. I say this advisedly, because, when the market is enthusiastic, the entire country has little respect for caution, so that braking the use of credit becomes a very unpopular activity.

Each major business cycle has seen credit abused. In 1919-20, speculative inventories were bought on bank credit. In 1929-30, we liquidated stock-market margins and the second and third mortgages on real estate. In 1931-33, we were bedeviled by how to eliminate German reparations and the British-French war debts—credit encumbrances that never should have been created and that nearly bankrupted capitalism before it was decided to forego their collection.

At present, the danger of abusing credit would appear to lie in the field of consumers' credit which is currently held in such high esteem. If consumer loans of all sorts are not held within reasonable bounds, we will find that, as a Nation, we have overinventoried ourselves and have mortgaged our future buying power in the course of financing the exuberance of a boom.

It is to be fervently hoped that the Administration will be wise and courageous enough to take the necessary steps to prevent credit getting out of hand in this very important area. This last consideration is one that should be watched in the future, since it will have little bearing on the market fluctuations we expect in the near future or on the important psychological advance which appears to be germinating during the present uncertainties.

A POSITIVE PROGRAM

The following basic points should be covered by any positive investment program which hopes to balance the reality of present values with the speculative prospects that are going to seem so compelling to future investors. Such a program should be based on the selection of individual stocks where

1. The present values can be established so securely that they will be held with confidence in the face of new stock offerings and the selling waves which can be expected to continue at intervals over the period immediately ahead.

2. The 1955 results promise to be so favorable that, on the publication of each quarterly statement, they will attract additional investors. Particular attention should be paid to "cash flow" stocks with hidden earnings due to amortization charges, and to successful research companies whose heavy scientific outlays should be converted into products and profits for tomorrow.

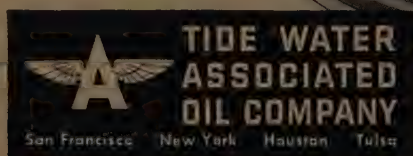
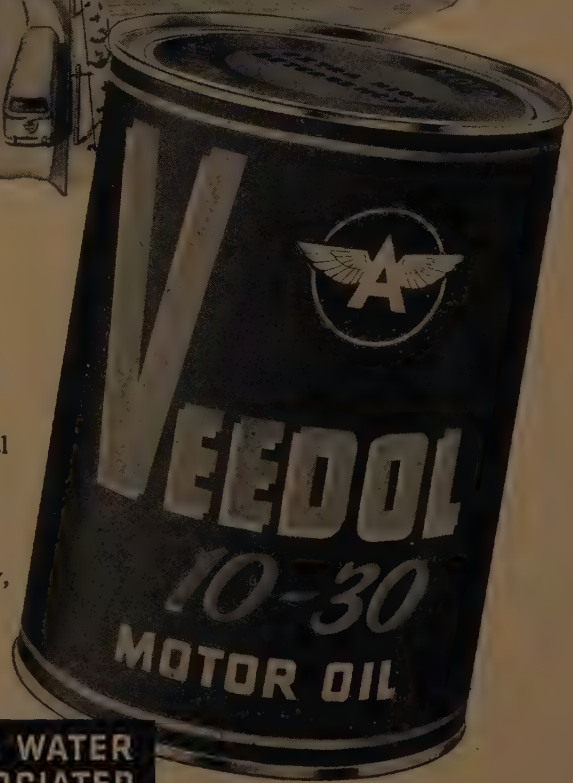
3. The future prospects appear to be so especially favorable that they will inevitably attract important investment funds when the stock market's attention will be primarily concerned with discounting the future.

Looming Ever Larger on America's Roads...



More and more, the FLYING -A- stands out on American highways as a symbol of quality in petroleum products.

More and more drivers want FLYING -A- power in gasoline. And very proudly the FLYING -A- appears on the blue and gold can of new Veedol 10-30—the sensational motor oil that assures highest octane performance and greater gasoline mileage! Symbolizing 76 years of progress by the Tide Water Associated Oil Company, the FLYING -A- will loom ever larger in the years ahead.



CHAIRMAN
N. LEONARD JARVIS
Hayden, Stone & Company

HONORARY CHAIRMAN
ALEXANDER E. LA POINTE
Manufacturers National Bank

St. Regis Paper Company

THE PAPER INDUSTRY is the fifth largest in the United States, outranked only by motors, meat packing, steel, and chemicals, it was brought out at the St. Regis Paper conference. Participants included R. K. Ferguson, president of the company; W. H. Versfelt, vice-president and treasurer; Arch Carswell and W. R. Adams, vice-presidents.

It is always important in one's consideration of an industry to determine its essentiality. Certainly in this respect the paper and pulp industry ranks high. It is vital to every segment of the American economy.

WAR USES

During World War II, 700,000 uses of paper were listed by the armed services. Furthermore, it is a low-cost commodity. Its cost is really incidental to the majority of individuals and companies using it.

Early in the century the industry was located largely in the Northeast and Middle Atlantic States, but now we find that it is located in 37 of the 48 states. In more recent years the manufacturing trend is toward the South, the Pacific Northwest, and to Canada. We are practically self-sustaining on all classes of paper in the United States other than newsprint.

RAPIDLY GROWING INDUSTRY

Another feature of our industry that is most important is the fact that it is a rapidly growing industry—one of the fastest growing in the United States. Furthermore, it is one of the most authoritative indexes of the standard of living in the United States.

Paper in all its lines, including converting facilities, represents today between \$8 and \$9 billion of sales and has about 400,000 employees, and the annual payroll is about \$1½ billion. The average return on net worth in the industry is about 11%, and the return on sales is about 7½%.

Last year production amounted to 26,700,000 tons. Contrast that with the production in 1904—fifty years ago—when it was 2,500,000 tons. Consumption last year was 31,200,000 tons. Estimated consumption in 1904 was about 3 million tons.

The large forest areas of the South, the Pacific Northwest, and Canada naturally have drawn the industry in these directions. It has placed on the pulp and paper in-

dustry the need for scientific management of forest lands—a continuous effort to minimize losses from fire, insects, and infestation.

It has required reforestation and planting, including the distribution of seedlings to small plot owners to insure an adequate wood supply. Furthermore, it has caused the greater use of hardwoods. There is a strong trend in the industry toward pulping of hardwoods.

The paper industry used to be termed a "feast or famine" industry. However, it seems to me that the record of the industry since 1946 should be examined to see if that label should not be dispelled.

INCREASED PRODUCTION

Since 1946 the industry has increased over 45%, and production is up over 50%. The annual rate of increase is 3½%. Among the coarse papers multiwall kraft during that period has grown 400%. It seems to me the manner in which the industry came through the 1953-54 inventory adjustment period with hardly a ripple is certainly another reason why it should not be characterized as a "feast or famine" industry.

Of course, an important factor in connection with this increase is the increased per-capita use and the growth of population. Back in 1904 the per-capita use of paper was 58 pounds per year, and in 1954 it was 392 pounds. Contrast this with some of the other countries of the world:

Canada	250 pounds
Great Britain	130
France	60
Italy	25
Japan	20
Russia	10
India	1
China	1

For the last year America was a very important exporter of woodpulp to western Europe, quite a contrast from the time the industry was dependent very largely on woodpulp supplies from Scandinavia.

NEED OF NEW PRODUCTS

The industry is faced with a constant need of new and better products through research. With the growing demands for containers for fresh fruits, vegetables, and other products, and shipping sacks for feeds and minerals, it is important for paper companies to co-operate with chemi-

cal companies for production of fibers, adhesives, compounds, and products either in lamination with paper or otherwise.

How does this all add up for the future growth of the industry? In the speakers' opinion, the production pattern of the industry on the North American continent will need to be doubled in the next twenty to twenty-five years to meet the demand for paper and paperboard, if present population trends and per-capita uses continue along the lines of the last decade.

IMMENSE AMOUNTS OF CAPITAL

Such a program would call for immense amounts of capital for plant facilities and other services. Another feature of that, in their opinion, would be strong stimulation to the present tendency toward integration going on in the industry.

Presently there are 4 plants in St. Regis printing paper division—16 machines with 300,000 tons a year of paper production. A substantial part of that is represented by groundwood, 150,000 tons; sulfite, 70,000 tons; and, in one of the middle western plants, waste paper to the extent of 100,000 tons per year. Of that pulp production, 125,000 tons are bleached pulp.

In the kraft paper and board group the company has 6 plants, 12 machines, 535,000 tons annual production, of which bleached grades amount to 170,000 tons.

MULTIWALL PAPER BAGS

St. Regis has been the leader in multiwall paper and bags which, as may be observed from the figures previously given, is one of the fastest-growing segments of the industry. In 1940 that segment in the total industry produced 500 million bags for 100 different kinds of commodities. In 1954 the total industry produced 2½ billion bags, and 400 different products were packed in those bags.

Multiwall bags are distributed for use among the following industries:

Agriculture	37.2%
Chemicals	32.9
Building materials	20
Minerals	6.4
Miscellaneous	3.3

The great potentials which lie ahead in that segment are in livestock and poultry feeds, which in 1954 used multiwalls to the extent of only about 20 to 25% of their total use of bags, and so there is a tremendous potential in that industry. What did 20 to 25% mean in volume in 1954?

It amounted to 325 million bags, so that this is a very important development in that segment of industry. There are also considerable further development possibilities in minerals and chemicals.

In connection with the multiwall type of bag, the company is obliged to fit definite and different types of products, and, in order to meet the need in that direction, it is necessary for them to be an extruder of polyethylene, which is applied as coating to certain types of containers. This segment of the industry has the management's immediate attention for further plans of development and expansion.

St. Regis is presently engineering and preparing to start the installation of another paper machine at Jacksonville, Florida, which is to be designed to produce 1,000 tons of liner board. That machine is being engineered and designed to run at 2,500 feet per minute, which would be faster than any present machine in the industry and should be a very low-cost unit in spite of that high capital cost that will be involved.

That machine, plus another one at Tacoma, Washington, would add about 400 tons of paper a day to their present pulp and paper capacity, will mean elimination of all market pulp from that mill, and will enable the company to take on added business in the Pacific Coast area. As a result of those two expansion moves, the sack and kraft-paper grades will be increased by approximately 400,000 tons of liner and 125,000 tons of paper, which would raise their present 530,000-ton capacity to practically double.

St. Regis has not been important in the liner board nor the container field. They have seven multiwall bag plants in the United States and three in Canada. Those are located from coast to coast and have the capacity of cutting up about 300,000 tons of production per year. The company supplies all of those plants with paper from its own production.

CANADIAN PRODUCTS

The three plants in Canada are supplied entirely by Canadian paper producers. St. Regis has no primary paper production in Canada.

The company also has at the present time two fiberboard container plants in Pennsylvania, which represent their first move into the container field as far as conversion is concerned. Before long, they hope to announce the acquisition of further plants, and more recently they did acquire a company located in Dallas, Texas, which is in the corrugated-box field and which is expected to be substantially enlarged in those directions under St. Regis management.

The company's multiwall bag business is somewhat distinct from some of the others in that they have a complete packaging system. St. Regis owns facilities for producing bags and bag-making machinery and equipment, and these, of course, are sold or leased to users throughout the United States and Canada.

Presently, there are about 4,000 packers in use in the United States and about 2,000 in Canada. Each one of those packers and the bags made to be used on them is a tailor-made job. One has to take each commodity and engineer it and determine the type of package that will properly do the work.

PLASTICS

As for the St. Regis plastics division, five plants in the United States and Canada manufacture laminated sheets, molded parts for industrial uses, decorative sheet and wall paneling, injection and compression-molded parts, and vacuum forming. They try to cover on a broad scale the various segments of the plastics industry.

An important possession of St. Regis is its forests. The company has 2¼ million acres of timberlands, 75% owned in fee. These do not include 6,000 square miles of timber

in the Province of Alberta which has been received for cutting rights from the Province of Alberta, and in which they share jointly with their associate, North Canadian Oils, Ltd.

75% OF WOOD PURCHASED

In the South and the Northwest, 75% of their wood is still purchased, and that policy will continue as long as market wood is available, in order to conserve their own stands of timber. In 1954 they used over 1 million cords of pulpwood, and with this expansion that amount will be greatly increased.

The company endeavors to stimulate interest in forestry in many ways, including the giving of forestry scholarships. They believe a program of constructive education is essential to them and to the industry.

RESEARCH AND DEVELOPMENT

In research and development, they have a central technical laboratory at Deferiet, which studies pulping, bleaching, paper making, plastic and pigment coating, hardwood pulping, new papers, better printability, quality controls, technical service to customers, testing procedures. The laboratory at Jacksonville is devoted chiefly to the pulping of chips, sawmill slabs and edgings, and the development of types of chippers and storage of chips.

At Pensacola the company maintains research on kraft papers, multiwall bags and containers, specifications for kraft papers, and development of threads for multiwall bags. They also maintain there a bag engineering department, studying problems of printing and manufacture of bags, design of new machinery and equipment, stepped-end bag and tuber development, notch cutter and tube closure.

At Providence they have an engineering department which builds filling and packing machines and bag-making

equipment. It also develops filling machines for valve and open-mouth bags, preweighing scales, balers, conveyors and sawing equipment. Panelyte also maintains laboratories at Trenton, Kalamazoo, Richmond, Cambridge, and St. Johns, developing materials for laminations, flame resistance, superior electrical insulation, better dimensional stability, special problems connected with decorative and vacuum forming.

FOREIGN DIVISION

Finally, they have the foreign division, including Brazil, Argentina, Belgium, and Puerto Rico. Those operations are all growing and developing. They only regret that they are unable to withdraw funds in the form of dollars from these areas consistently, but they are using the funds in various ways. In Brazil, for instance, they are putting in another bag plant at Recife.

EMPLOYEES

St. Regis currently employs 13,000 persons, the number having doubled in ten years, and their payroll amounts to \$52 million annually. In addition, they have insurance and retirement and social security contributions which add another \$3.7 million annually. Job cost is about \$1,650 per employee, up about 80% in the past ten years.

In addition they have a company-wide training program, practical job training for production workers, general training for supervisors, a program for college-graduate trainees, and an orientation program for executive and administrative talent. This last program was started in 1953. There were 22 members in the 1953 group and 20 in the 1954 group. The company expects in 1955 to increase substantially the earnings that resulted in 1954, and the speakers believe that, based on the first quarter, there is every indication that this prediction will be fulfilled.



THE COLUMBIA GAS SYSTEM, INC.

The Board of Directors has declared this day the following quarterly dividend:

Common Stock

No. 84, 20¢ per share

payable on August 15, 1955, to holders of record at close of business July 20, 1955

June 2, 1955

DALE PARKER
Secretary

The UNITED Corporation

The Board of Directors has declared a semi-annual dividend of 10 cents per share on the COMMON STOCK, payable June 10, 1955 to stockholders of record at the close of business May 23, 1955.

WM. M. HICKEY,
President

May 11, 1955



WARD BAKING COMPANY

The Board of Directors has declared the following dividends:

PREFERRED DIVIDEND—

The quarterly dividend of \$1.37½ a share on the Preferred Stock payable July 1, 1955, to holders of record June 16, 1955.

COMMON DIVIDEND—

A quarterly dividend of 25 cents a share on the Common Stock payable July 1, 1955, to holders of record June 16, 1955.

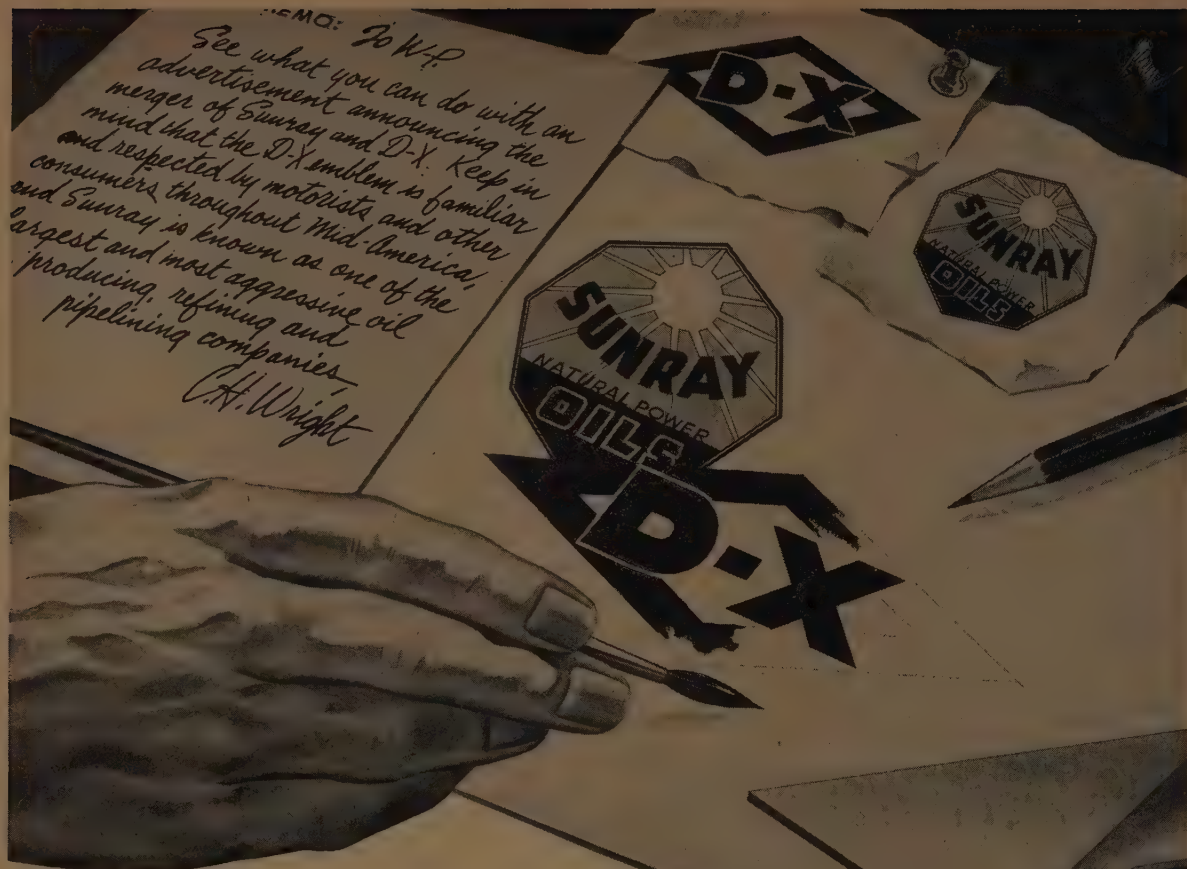


L. T. Melly, Vice Chairman and
Treasurer

475 Fifth Ave., New York City

May 17, 1955





TWO WINNING TEAMS JOIN FORCES....

Two companies, each a leader in its own field, have now combined to form one organization that will benefit from the individual strength of each.

MID-CONTINENT PETROLEUM CORPORATION, refiners and marketers of D-X — the *only* Lubricating Gasoline — and D-X Motor Oils, joins SUNRAY OIL CORPORATION, engaged in exploration, producing and refining of crude oil and its products. The merged corporation, SUNRAY MID-CONTINENT OIL

COMPANY, becomes a fully integrated organization with complete facilities to handle oil from its discovery in the field to the distribution of high quality products to D-X service stations, bulk plants, distributors and industrial accounts.

This winning combination — with a constant endeavor to be *Ahead of the Parade* — will bring new efficiency, economy, and aggressiveness to the Company. It will afford better supply, products, and service to its thousands of D-X station, dealer, and distributor customers throughout the middle west and mid-south.

Watch SUNRAY MID-CONTINENT Grow!

D-X is the brand name of quality products manufactured by D-X Sunray Oil Company, a wholly-owned subsidiary.



SUNRAY MID-CONTINENT OIL COMPANY
GENERAL OFFICES • SUNRAY BUILDING • TULSA, OKLAHOMA

HONORARY CHAIRMAN
HERBERT C. WELLS JR.
Rhode Island Hospital Trust Company

MODERATOR
EDWARD G. HEINBECKER
Continental Insurance Company

Outlook for Oil Industry

The Outlook for Oil Industry Profits

BURTON ST. JOHN*

THE SUBJECT THAT HAS BEEN ASSIGNED TO ME is certainly in the "neck-sticking-out" department, particularly when we consider all the imponderables that enter into any forecasts of earnings for any group or groups of companies. Moreover, the oil industry is now becoming considerably more than just that; that is, the injection of petrochemicals in the form of agricultural chemicals, plastics, and so on, to say nothing of natural gas, poses additional problems which complicate matters for the forecaster.

However, before we can talk about the probable trend of profits for the various branches of the industry this year, I think that, first, we have to decide in our own minds what is likely to happen to crude-oil prices under the supply-demand and product price outlook. It seems to me that too many of us have been paying too much attention to the reams of propaganda that have been pouring in from the independent producers about crude-oil imports.

It must be remembered that considerable pressure is being exerted on Congress at the present time to impose a quota on imports of crude oil. Consequently, a great amount of the so-called "information" that comes to us from the producing states is not based on economic facts but is designed to influence not only the Congress but also as many other people as possible.

The success of this campaign is amply demonstrated by the fact that there have been several predictions of crude price cuts this year—one of these predictions that I recall forecast a cut of 50 cents a barrel before the end of April—with additional cuts, at least equally severe, before the end of the year. In my opinion, such forecasts are not justified by the facts.

It seems to me that too many of us lose sight of the fact that there is no free market in crude oil and that the price of crude oil is highly insensitive to near-term conditions and trends. There is no open auction in crude oil—no bidding as there is for other commodities.

The reason is simple. Crude oil is moved under a highly complex and cumbersome system of buying and selling—a prospective purchaser, for instance, cannot buy a few barrels from the output of any field or well, nor can his contract cover the output of a well for only a few minutes a day.

Most contracts are for at least a year, many for a longer period, and the buyer must put in a gathering system and usually owns or has an interest in the trunk pipe line served by this gathering system. This entails a large capital investment.

Moreover, the price of crude is not sensitive to the price of products except over the long trend. This trend has been moving in one direction—upward—for a considerable length of time, despite periodic interruptions.

Also, the price relationship between crude oil and products is further distorted by proration. Accordingly, relationship studies that are so often referred to can be ignored, since they generally cover periods of unregulated flush production of large new fields, as well as other factors not in effect today.

DETERRENT TO CUTTING PRICES

Another deterrent to cutting crude prices is the fact that, in fields that are served by multiple buyers, a cut in the posted price of crude by an individual buyer is particularly dangerous, since, if it is not met promptly by the other companies operating in the area, it merely results in the loss of connections, rather than a lasting cut in crude prices.

What *would* break the price of domestic crude oil? The greatest single factor would be the discovery of oil that could be produced so much cheaper than we are presently producing it and in enough quantity that it could be profitably offered at a concession below present posted prices.

Moreover, this would have to happen in an area that is not subject to regulation. No crude is being found and brought to market today at sufficiently low cost and in large enough quantities to force a break in the price.

*Shearson, Hammill & Company.

With one or two minor exceptions, there is not an oil company today leasing land, doing the necessary geological work, finding oil, producing it, and bringing it to market below the current price. Money is being made on crude production because of the large owned reserves which were found at much lower prices, and because of depletion allowances and other considerations.

In this connection, it might interest you that one major company's over-all cost to produce crude oil is \$2.18 a barrel—field-lifting costs alone amount to 43 cents a barrel—and this includes only a small percentage of oil found in recent years. Some of the oil being produced was found at a cost of as low as 10 cents a barrel.

Thus, the oil industry is predicating its present operations in the search for oil on a continuation of the price trend that has been in effect since the end of World War II. Certainly, the prices that are being paid for leases in the Louisiana Tidelands, or for that matter practically anywhere, are based on rising crude prices.

Another widely quoted threat to the domestic crude price structure is that imported oil can be laid down on the East Coast of the United States at approximately 50 cents a barrel less than Texas Gulf crude.

THREAT MORE APPARENT THAN REAL

This threat is more apparent than real, but, before expanding on this aspect of the crude-oil market, let me say that there are three factors basically to blame for this situation: the attitude of the Department of Justice, the selfish interests of the Middle Eastern countries and the postwar collapse of tanker rates. In previous Administrations, the Department of Justice assumed an implacable stand against any international agreements, and, in fact, two suits are presently pending against American companies charging price fixing.

As a result of this attitude on the part of the Justice Department, the international companies are unable to consult with each other about this problem or plan their world activities in an efficient and economic manner. Subsidiary companies, controlled by the same U. S. interests, but operating in different world areas, are even unable to discuss this situation one with the other.

There is no doubt that the pending suits will be settled in time. The economics of a situation almost always prevail over political considerations in the long run. When that time comes, the international companies will be able to educate the owners of foreign concessions, just as it was necessary to educate the farmers in the early '30's that price is more important than volume.

You will remember that, when crude oil was then selling for \$1 a barrel without any restrictions on production, there was a rush to produce two barrels to get \$2, and so on. Unfortunately, this did not happen. It merely broke the price of crude to as low as 10 cents a barrel, and, even after restraint was exercised, prices had considerable difficulty in recovering to former levels. This pattern is already developing in Kuwait.

Production has been rising steadily, and prices have been dropping. Over the longer term, and despite the fact that imports will almost certainly increase because domestic production will be unable to keep pace with anticipated

domestic demand, this release from the present threat of Government action will enable the international companies to employ some method of control over production, just as the Interstate Oil Compact functions in the United States. This should result in more efficient production and steadier prices, and foreign oil should then flow from each producing area into its logical consuming area.

As for tanker rates, there was a glut of tankage space available after the end of World War II, and rates declined precipitously. More recently, tanker rates have been strengthening, reflecting the steady increase in world oil demand and a somewhat slower pace of new tanker construction.

Accordingly, this should be less of a contributory factor to lower foreign crude prices as time passes. In the meantime, large quantities of foreign oil will continue to seek out the plush U. S. market.

Now, why does the 50-cent differential between the laid-down price of foreign and domestic crude constitute a threat to the price structure that is more apparent than real? Well, the companies that are the largest importers of oil without exception depend more heavily on the U. S. market for their *final* profits than on any other area. Any action that would jeopardize the greatest market for oil and oil products in the world would be an economic move of the greatest folly on the part of these companies.

POLITICAL DYNAMITE

Moreover, these companies are aware that the question of crude prices is political dynamite, and, regardless of the present economics of the situation, the importing companies would have to bear the brunt of the blame for any cut in domestic crude prices. This would give additional ammunition to the propagandists, and there seems to be little doubt that a quota on imports would be imposed almost immediately, particularly considering the present furor that is being raised over this question.

Accordingly, it appears to me that the international companies are practically obligated to do everything within their power to maintain the present crude price structure. The rate of imports therefore must be, at least temporarily, regulated on a voluntary basis so as not to create a threat to the existing domestic price structure.

Also, a cut in crude prices would be little short of disastrous when it is remembered that crude prices are the foundation not only of the industry's entire price structure but also of a large part of the financial structure—look at the drilling loans, production loans, oil payments, and the like that have been made, based on present or higher crude prices, all of which would have to be readjusted or re-examined on any cut in crude.

Let us assume then that, at least for the balance of 1955, crude-oil prices will remain stable, except for the geographical and quality price adjustments that you hear about from time to time. Incidentally, the next time anybody tells you that crude oil is being sold from such and such a field at 40 to 50 cents below posted prices, ask him for names, dates, quantities, quality, and other data. I am sure you will find that these reports are grossly exaggerated.

Now then, on the assumption that crude prices will be unchanged, what can we look for in the way of industry

profits within the framework of supply and demand and product prices? Let us discuss industry profits in their three logical segments: that is, the international companies, the domestic integrated companies, and the crude producers.

Despite the complexities of the operations of the international companies, I think that the problem of forecasting their trend of profits is probably less difficult than for any other group. The variations in profits for these companies from quarter to quarter—with the exception of the final quarter which includes dividend payments received from foreign affiliates—is considerably less than for both the domestic integrated companies and the producers.

In the first quarter of 1955, total profits of \$378.4 million realized by the international companies were 12.3% higher than in the preceding year. Now, since the foreign companies will benefit from both the indicated rise of 5% in domestic demand that has been forecast and the anticipated 9% in foreign demand, the profits performance should be considerably better than for any other group. By quarters, for the balance of the year, I anticipate not much change in second-quarter profits from those of the first quarter, but a fair increase in the third quarter and the usual excellent final three months.

On this basis, I look for 1955 profits of the international companies to reach the record figure of close to \$1,600 million, an increase of roughly 14½% over 1954. Let us say then that, for the international group, profits this year should run 15% higher than in 1954, give or take a percentage point or two.

FORECAST MAY SEEM LOW

This forecast may seem low to many of you in the light of subsequent predictions that I will make on integrated companies, and in view of the large increase forecast in foreign demand, which will come on top of the excellent rise in prospect for the domestic use of oil products. Although the anticipated 9% increase in foreign demand in terms of barrels daily is equal to approximately 100,000 barrels more than will result from the expected increase in domestic demand, the gasoline cut per barrel of foreign crude is considerably less than the domestic yield, so that the increase in profits from this operation will not be so great as the increase from the same number of barrels refined for sale in the United States.

Now let us look at the domestic integrated companies. I do not think there is much doubt but that they will also have the best year in the history of the industry.

The profits of those companies that have reported so far for the first quarter of 1955 were about 5% above the similar 1954 period. Last year there were substantial successive declines in the second and third quarters.

Although I look for second-quarter profits to be below those of the first quarter, I do not anticipate that the decline will be so severe, and, for this period, profits should be in the nature of 7½% higher than last year. Though the year-to-year comparison is considerably better than for the first quarter, it reflects the comparatively poor second quarter that most companies reported for 1954.

In the third quarter, I think we should see a good recovery in earning power. After all, gasoline is the money

product, and, with driving developing as forecast, and with better average prices possible, it seems to me that profits could recover close to the first-quarter levels. Therefore, I would think that, in this period, we might see earnings a plush 18% above the depressed level of 1954.

Forecasting the fourth quarter poses the greatest difficulty because the weather is such an important factor in this period. Moreover, the year-to-year increase will likely be considerably less than for the third quarter, because of the extremely good final three months of 1954. Taking these factors into consideration, let us say that profits in the last quarter will be something like 12% better than in 1954. On this basis—with a lot of ifs, ands, and buts—full-year profits for the integrated companies should be about 10½% above 1954—again refining it pretty narrowly.

THE PRODUCERS

Now we come to what is for me the most difficult group to forecast: the producers. The principal producing companies had a tremendous increase in profits for the first quarter of 1955, better than 20% above that of a year ago. I think that this represents the bonanza for this year, insofar as percentage increases are concerned.

One way to look at these profits is in terms of allowable producing days in Texas. Though I realize that this represents only a portion of the total, it is nevertheless the most reliable yardstick that I have in this connection.

Last year there were 194 allowable producing days in Texas. This year the allowable number of days is estimated at, roughly, 189. This, of course, does not mean that less oil will be produced; on the contrary, production will be up because of new discoveries, extensions of old fields, and similar factors.

However, in the first quarter of 1955 there were 54 allowable producing days in Texas against 50 last year. This means that, if the forecasts of the necessary number of producing days to meet indicated demand are correct, there will be only 135 producing days in the last nine months of this year, against 144 actual allowable producing days for the same period in 1954.

We have already seen successive cuts in April and May in crude-oil allowables. Additional cuts will undoubtedly be necessary throughout the summer.

I am not going to attempt to forecast the variation in producing companies' profits quarterly, since the action of the Texas Railroad Commission with respect to allowable days will have such a great effect month to month. Let us look for producing companies' profits about 11 to 12% greater than last year.

The sum of these forecasts adds up to a healthy increase in profits for the industry this year. Nevertheless, I believe that, given a reasonable break in the weather, they could be easily realized and may even be exceeded, particularly if gasoline prices improve in line with the excellent gains indicated for demand. The profits performance by individual companies will vary widely, and, obviously, those companies that are the best gasoline marketers will turn in superior showings. In any event, 1955 should see the industry setting new records in all divisions of operations.



Cities Service MARKETED in 1954 more petroleum products than ever; demand for its branded gasoline increased at double the industry rate



Cities Service MANUFACTURING reached new peaks as a result of \$105,000,000 spent on additions, replacements and investments



Cities Service RESEARCH carried product quality to the highest level in history . . . outstanding examples: 5-D PREMIUM Gasoline and 5-D KOOLMOTOR



Cities Service TRANSPORTED more crude and refined products than ever before—by sea . . . by pipe line . . . by inland waterway . . . by rail and highway



Cities Service EXPLORATION resulted in important oil and gas discoveries, a number of which hold promise of becoming outstanding major fields in its history



Cities Service PRODUCTION of petroleum liquids in the first two months of 1955 was 125,000 barrels per day, a daily increase of 13,000 barrels

A PICTURE STORY of 242,000 men and women

...engaged in a joint enterprise to meet the petroleum and natural gas demands of millions of customers in 38 states and Canada.

THIS BILLION DOLLAR activity is the hand-in-hand effort of shareholders, employees, dealers and distributors, working together under the banner of the Expanding Circle.

As a result, Cities Service in 1954 reached the strongest position in its history.

These candid camera shots highlight a few of the 1954 activities, as the people of Cities Service went about their daily tasks . . . performing the multitude of skilled operations which are necessary before the finished oil and gas products are ready for use on the farm, in the home, in the air, on the highway and in the factory. Because

these tasks were well done, Cities Service is able to report the following new records established in its 1954 operations:

Sales of petroleum products	98,283,000 barrels
Sales of natural gas	456 billion cubic feet
Revenues from sales of petroleum products and natural gas	\$618,786,682
Working capital (including cash and Government securities of \$228,353,323)	\$315,278,048
Total assets	\$1,053,527,394



Copies of our 1954 Annual Report will be gladly provided on request, by addressing Business Development Department, Cities Service Company, 70 Pine Street, New York 5, N. Y.

CITIES SERVICE

Seasonal Factors in Oil Supply and Demand

JOHN G. WINGER *

Mr. John G. Winger had already started his talk before stenotypist was requested to cover the session on "Outlook for the Oil Industry." Mr. Winger is covering this subject fully and bringing it up to date in the winter issue of the JOURNAL.

IN THE EARLY PART OF 1954, excess production in the oil industry put inventories at a high level, and prices dropped accordingly. By the time the industry recognized the need for a reduction in operations, the damage had been done, and all we could hope for was to keep prices from deteriorating further.

What happened during the second half of the year was all to the good. Operations were reduced to a low level and held there.

Refiners as a group, with no proration authorities to control their operations, exercised admirable restraint, and, as we moved into the fourth quarter of the year, our winter began to seem more like normal. The weather was considerably colder and naturally the consumption of heating oils and Diesel fuel was increased. Industry became more optimistic, and the price of heating oils had advanced by the end of the year to an all-time high.

However, because it was the off-season for gasoline, the price of that product remained very near the summer low. As we came into the year 1955 we had quite a good situation. Prospects for demand were much improved.

The industry expected from 3 to 5% increase over the previous year. It was our view that the 5% figure seemed best.

The number of consuming units in used based on normal end-use factors such as weather and average consumption of motor vehicles indicated that the 5% was good. In volume, that represented roughly 8½ million barrels a day.

The proration authorities and the importers had things pretty much in line. The volume of new supply that we received for January was almost exactly, I believe, what we should have for a good situation based on 1954, and that would exercise the necessary restraint to keep supplies from again getting out of hand. We were a little too optimistic.

As early as February the volume of new supply was set at a level that seemed too high. With no reduction in March and through April, the supply was held considerably above what seemed reasonable.

Now at this point I should mention that there has been a development in the postwar period which did not seem to be generally recognized by the industry. Some companies recognize it and some individuals do. Many people,

when you mention the subject, act as if it is brand new, but the development of a seasonal petroleum demand had become so important that it can no longer be ignored.

The industry can no longer operate as it had operated in the prewar period. The major change, of course, was the greatly expanded use of oil for heating purposes. The demand for distillate fuel during the two winter quarters represent 70% of the annual consumption, and only 30% during the two summer quarters.

And the increased use of the automobile has changed consumption habits for that product. We now have about 52% of the gasoline consumed in our two summer quarters and 48% in the two winter quarters.

The combined effect of this change in use of petroleum means that the average demand for petroleum in the two quarters of winter is about a million barrels a day or more higher than in the summer quarters. The peak consuming month, which may be December or January, is usually 2 to 3½ million barrels a day higher than in the low month, which is almost always May.

Now that means that the industry must change its level of operations. It cannot proceed at the expanded rates which have been established for the peak consuming season and hope to hold them through the year.

In the first place, that would be more oil than would be needed during the year, and, in the second place, the inventories are built up to such a level by midyear that there is a great pressure on the refined product price, and the refiner is in the squeeze because his price is subject to the law of supply and demand. And, because of our conservation laws, the price of crude oil has another factor controlling it.

Well, getting back to 1954, the industry did not recognize the need for a reduction in operations, and the result was all too painful. Now, in 1955, we again need the cutback in operations, and again there is a reluctance to make it. There is a lag, and, during the first four months of the year, we have had enough excess production to put inventories at a level on April 30 that should not have been reached until about six weeks later.

Demand during the first four months of 1955 has been exactly on the nose with what had been forecast. The increase over last year for these four months has amounted to 6%. The cold weather, which was evident during the fourth quarter of 1954, continued during the first quarter of this year. Many of you undoubtedly realize that from the size of your heating bills.

*Petroleum economist, petroleum department, Chase Manhattan Bank.

The use of gasoline has also measured fully up to expectations, and the use of residual fuel and industrial oil has exceeded expectations. That is partly due to our higher level of industrial activity and also due to interruptible gas contracts.

For those of you who may not be familiar with that type of contract, the gas load primarily is meant for domestic consumers, but there is relatively little domestic consumption during the summer months. The gas flow must continue.

Therefore, it is sold to industry on an interruptible basis at a lower price. But, with the colder weather this past winter, the domestic load took all the gas, so that the interruptible contract went into effect, and therefore the industrial users had to turn to residual fuel, namely, coal.

That brings us up to date. What is the outlook for the rest of the year?

The requirements for a good situation, and by a good situation I mean one that will permit the refined-product prices to recover, are that the output of new oil be very sharply reduced, at least by a half million barrels per day. Frankly, I do not think that will happen. There is a lag.

The proration authorities are reluctant to cut production. They have a number of pressures on them. I think that the cuts will come, but too late to save the price.

That does not mean that prices will deteriorate further,

but I think it will prevent the recovery that is needed to help the independent refiner. I might qualify that statement to this extent.

I said that the gasoline consumption during the first four months has measured up to expectations. Currently it is exceeding expectations. That may continue.

There seems to be a very good reason for it to continue. There is a great deal of optimism about today, and we all know about the record sale of new cars.

You can ask this question of yourselves. Is it not normal when you have a new car to want to get out and use it? You don't want to depend on the short trips. You want to get out on the road and see what your new car will do. Also, if vacations were curtailed in 1954, possibly the vacation plans are such this year that travel will be considerably greater.

There is some talk that we may have an adjustment later. It seems hardly likely that the production of automobiles can continue at the rate that it has done.

There is a good deal of argument pro and con as to whether housing can proceed at the rate it is proceeding. If a cutback comes, it seems likely that it would be in the third quarter, and undoubtedly it will affect the consumption of residual fuel oil. I rather doubt that it would have much impact on the consumption of gasoline.

As far as the distillates are concerned, they make little difference because consumption of them is dependent on other factors.

So it would seem that, as we enter the third quarter of the year, the industry will have a better demand this year than last year, and very likely a better price level. Crude-oil prices will not be different from last year, but the volume of crude-oil production will undoubtedly be higher.

Refined-product prices, even though they do not recover to where we would like to see them, will be higher than they were last year. They hit bottom last July and did not recover until the start of the fourth quarter.

As we go into the fourth quarter of the year, we again must base our forecast on normal weather. If we assume a mild winter there is a possibility that our margin of error would be doubled. Therefore, we proceed on the basis of the normal units.

We might at this point briefly review the year 1955. The first quarter has been very much better than the first quarter of last year. The second quarter likely will be better, although not by the same margin as the first quarter. The third quarter again may considerably exceed the third quarter of last year, and the fourth quarter may show a somewhat slower growth.

At the beginning of the year we had thought, as I mentioned before, that the average increase would be 5% in total demand. At this point we see no reason for altering that forecast.

The industry's oversupply problems stem from a number of causes. We might have different ideas as to which is most important. I would just like to mention three of what I think are the most important. First we have the development of productive activity.

Industry leaders and the Government have agreed that

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this Nation must have a reserve of productive capacity for use in case of national emergency. The figure most frequently mentioned is 20% of our demand. We have today, according to the latest figures, a reserve of about 24%.

We have the capacity. Who is going to hold the reserve? That is the question. No one wants the responsibility, and that is understandable.

We have also the problem of increasing imports. Imports have been a controversy for many years, and I do not propose to take a side. I do not know the solution to it and have nothing to say that would clear the air, but imports are a problem.

If a satisfactory and realistic way were devised for removing the imports from the scene, then our reserve of productive capacity would be approximately 7½%, far short of what is considered necessary for the national welfare. Assume that the imports were removed and the domestic industry were able to build up the reserve of productive capacity, would we not be then right back where we are today with the reserve and the reluctance to hold the reserve?

Another factor causing the excess of productive capacity is the increase of production in new areas; Texas, Louisiana, Oklahoma, and Kansas have had historical percentages of total production, and they like to see the production remain there.

But the Rocky Mountain area has come into importance, has exhibited a remarkable growth, about 12% per year, in the postwar period. Naturally, with other areas coming in, the old areas cannot hold their percentages; yet they are reluctant to give them up.

We have had, in just the past year and a half, approaching two years, a sharp increase in development drilling instead of exploratory drilling. That means simply that the productive capacity is increased much more rapidly than the reserves, and it means that the proration mechanism then cuts back the allowable rate of production.

I had an independent oil man tell me just a few days ago that he had drilled development wells as fast as he could, just to keep his income up. Well, when you multiply that man's experience by many more independent producers, you have a vicious circle.

I might point out the effect of these new wells. Through the first five months of this year we will have 85 producing

days in the state of Texas, exactly the same number of producing days we had in the same period last year.

Now, this figure is an estimate, but I believe it will be fairly close. During those five months Texas will produce 225,000 barrels a day more this year than last year.

That increase in production from the same number of allowable producing days, how can that continue? There must be a stop some time if we are going to get away from the oversupply conditions.

I mentioned earlier the seasonal demand and the failure of the industry to recognize it. That means that the excess capacity, which is needed for an emergency and is also needed for the peak load of demand in the wintertime, is not administered correctly. In 1954, the total production, total volume of imports or new supply, was not out of line with demand, but too much of it was concentrated in the first part of the year, and product prices, of course, suffered.

So some sort of education program is needed to impress on the industry, the independent producers in particular, that a reduction from their January or February rate is not abnormal, it is not unhealthy, it just represents good operations.

One other factor that is quite important in our oversupply situation is the competition from natural gas, and again there may be a lack of recognition on the part of the industry that, if they expand the output of one, if the growth of one is greater, the other necessarily must suffer. And undoubtedly the need for reducing allowable days in the state of Texas is in part a result of the expansion of that state's gas production. Possibly the failure of the industry to recognize these new developments, these new factors in the supply situation, is due to their preoccupation with the import problem.

I have the feeling that there is reason for optimism. There is more evidence this year, as we talk to industry people, that they do recognize the seasonal factors, they do recognize the effects of production from other areas and competition from natural gas. In time—we would hesitate to say how long—these factors may be less important, I think, and the industry will realize that imports are not the only problem, that there are others, and that these others have a place in the total picture and must be dealt with if the industry is to have price stability, production, and refinery stability.

OUTBOARD, MARINE & MANUFACTURING COMPANY

Dividend Notice

A cash dividend of twenty-five cents (25c) per share on the Common Stock of the Company has been declared by the Board of Directors, payable May 25, 1955, to stockholders of record May 6, 1955.

H. M. FISHER, Secretary
April, 1955.

NATIONAL DISTILLERS

PRODUCTS
CORPORATION



DIVIDEND NOTICE

The Board of Directors has declared a quarterly dividend of 25c per share on the outstanding Common Stock, payable on June 1, 1955, to stockholders of record on May 11, 1955. The transfer books will not close.

PAUL C. JAMESON
April 28, 1955 Treasurer

**To serve
more people
better...**



Richfield Reports on 1954...

BALANCE SHEET AT DECEMBER 31

Assets	1954	1953	Liabilities	1954	1953
Cash and Government securities..	\$ 36,037,209	\$ 23,967,231	Current liabilities.....	\$ 24,904,413	\$ 26,827,515
Accounts receivable (net).....	31,482,947	28,251,390	Long term debt.....	84,000,000	71,000,000
Inventories	33,896,173	36,641,634	Reserve for contingencies.....	202,647	202,647
Investments and advances.....	4,245,053	3,145,547	Stockholders equity:		
Capital assets (net).....	179,523,089	165,645,132	Capital stock.....	74,496,630	74,496,630
Deferred charges	4,719,906	4,055,844	Earnings employed in the business	106,300,687	89,179,986
	<u>\$289,904,377</u>	<u>\$261,706,778</u>		<u>\$289,904,377</u>	<u>\$261,706,778</u>

OPERATING STATISTICS—BARRELS	1954	1953
Production of crude oil—gross....	26,746,000	26,499,000
Production of crude oil—net.....	20,809,000	20,603,000
Crude oil processed at refinery...	41,137,000	40,751,000
Sales of refined products.....	40,122,000	37,752,000

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555 SOUTH FLOWER STREET,
LOS ANGELES 17, CALIFORNIA



INCOME ACCOUNT FOR THE YEARS 1954 AND 1953

	1954	1953
Gross operating income....	\$223,310,969	\$202,039,003
Costs and expenses.....	184,282,580	156,332,534
	<u>\$ 39,028,389</u>	<u>\$ 45,706,469</u>
Interest expense and nonoperating income—net	(1,457,688)	(380,983)
	<u>\$ 37,570,701</u>	<u>\$ 45,325,486</u>
Provision for Federal taxes on income.....	12,000,000	16,450,000
Net income.....	<u>\$ 25,570,701</u>	<u>\$ 28,875,486</u>
Net income per share..	\$6.39	\$7.22

RICHFIELD OIL CORPORATION

Executive offices: 555 South Flower Street, Los Angeles 17, California

Oil Reserves, Imports, and Regulation

C. LESLIE RICE JR.*

I AM NOT REALLY an expert in this field. I actually represent some considerable amounts of capital invested in various phases in the industry, and it is my job among other things to try to look after their position and what may lie ahead of them in terms of investing in the oil industry at any given time.

In view of the fact that I am not truly an expert on these matters, I am reminded of the joke Nathan Schuman once told about a couple who lived in Kansas and had an old farm full of rocks, very poor. They struggled along, made an existence out of it and raised their children.

One day the land was leased, a well was drilled, and an oil discovery was made. Suddenly they were rich beyond their fondest dreams. So they decided to travel a bit and see the world. They traveled around the world and always had the best of accommodations. Nothing was too good for them.

Finally they landed on the Florida coast, enjoying a session in the sun. One day the old gentleman and his wife went down to the beach. He walked along the beach to see if there was anything to see that day. She stayed behind and waited and finally decided to take a swim.

Well, one thing led to another and she got caught in the undertow. The lifeguard went out and rescued her, brought her back, and began to work on her.

Just then the old man came back along the beach and saw the crowd and busted through and saw his wife there on the beach with this fellow working on her.

He said, "Hey, young feller, what you doing with my wife?"

The fellow said, "I am sorry, sir. I am giving her artificial respiration."

"Why," he said, "Hell, give her the real thing. We can afford it."

I suppose the oil industry as we know it today had its start back in January of 1900 when Spindle Top blew in. With that gusher throwing oil 100 feet over the derrick, a new era in liquid fuels began, because for the first time there was oil in real quantity on which an industry could be based. So the story of the oil industry began with Spindle Top, and that liquid fuel age which began there is still unfolding.

Actually, from all the surveys I have seen, looking forward into the future, looking to 1970 or 1985, the future demand for energy far exceeds the visible supply of liquid fuels. Actually atomic power from coal must play a very great role in our future energy requirements.

Now, since my topic is the domestic oil industry, I would like to make a few general observations. These are probably very basic. Maybe I am so ignorant I am insulting your intelligence. I have no intention of doing so.

There are a few things about the industry that have al-

ways intrigued me. One is the fact there is total consumption. There is no scrap in oil.

There is nothing left over when a gallon of fuel oil or a gallon of motor oil is burned up. In fact, I think it is a fair statement to say that there has been no new oil form, no new gas form since Gregg made his discovery in 1859.

The source of oil as we know it takes years far beyond our ken to accomplish. Actually, to paraphrase a remark by the late Justice Jackson, the wealth of the mightiest and the wit of man cannot produce or reproduce an oil field.

Second, it is entirely a cash business. There is certainly no inventory. In fact, I am one of those people who believe that there is far too little inventory.

We have been over a period of years decreasing the number of days' supply of petroleum products and crude oil above the surface, and that has had, as we went into the seasonal factors, some serious repercussions because there has not been enough storage to take care of the seasonal factor between winter consumption of fuel oil and summer consumption of lighter products. So the business is a produce-today-sell-tomorrow type of business.

Third, the efficiency of oil products, liquid products, and the availability have caused historically a flexible demand. When prices fall, petroleum products gain competitively.

During the depression, the industry lost its growth factor. It did not lose much of the business already in hand. It lost its price factor. But out of the depression came tremendous new demands for petroleum products. Also there is a tremendous potential world demand for petroleum products which we are now nowhere near satisfying.

Fourth, proration, based on the maximum efficient rates of production of reservoirs, which essentially is a state system to prevent waste, has, I think, over the years increased reserves in the United States, and, furthermore, has stabilized supply, and thus incidentally more or less stabilized the price of crude.

I believe that proration in the long run has saved consumers from tremendous amounts of money being spent unnecessarily by saving reserves in the ground which are now available at reasonable prices.

Last, there is an increasing refining flexibility, continual improvement of refining techniques, gradually upgrading prices to increase profit margins, decrease of low-profit ends from each barrel of crude.

Now, these factors have, in my judgment, made the domestic industry strong, but, in spite of these factors, we have become unwittingly an oil-deficient nation. I think that our deficiency in oil is almost entirely due to the fact that the American people have become rich over the years, and as rich people they have developed always new ways of consuming petroleum. The ability of the industry to find reserves has not matched the ability of the public to consume the product.

*Vice-president, Empire Trust Company.

Now I have to take issue that I did not intend to take, but, in my judgment, the exploration efforts being conducted in the various new regions of this country such as Williston Base, Rocky Mountains, and other areas generally have been very disappointing. The cost of finding oil is very high.

The figures, if you accept them, show that Texas lost reserves last year. In other words, they added less new reserves than they produced from their old reserves. That is a very significant thing in this day of intensive exploration and development activity.

California had an intensive search for gas, but it was disappointing. The tidal discovery rate has been good so far, but the cost has been relatively high. In terms of oil you really have the same type of general record.

The Williston Base has been a fair area. It has been disappointing to a certain extent, because there have been no shallow varieties discovered to match the shallow production in other major producing areas.

The southeastern portion of Saskatchewan and the southwestern portion of Manitoba have been very interesting because of the number of discoveries there. Generally, however, they are small in extent and have not been important in terms of adding any reserves.

The Canadian discoveries elsewhere include Pembina. Pembina is a very large area in which a tremendous amount of oil can be produced, but, because of low recoveries per acre or relatively high development costs, it will not be an extremely profitable field.

In the Tideland area, generally, in oil the results have been good, but it is very expensive. Taking it all in all, during the year 1954, it does not appear that the industry has offset in terms of new reserves and productivity the general growth in demand.

Now, that has brought us to this question of importation of oil. We all know, I think, that we must bring in a certain amount of oil because we are a deficient nation.

The question really has been: How much oil shall we bring in? And I think this is one of the two major problems facing the domestic industry today, and on the solution of these problems depends in large measure the future investment appeal of oil securities.

I would like to take a brief look at the import question as I see it. In the first place, the importers have a very good case. They have nearly a \$5 billion investment overseas that they want to realize a return on, as well as recapture that investment.

Second, there is a question of peacetime availability. We are at peace now. There is no war in the world that interferes with the flow of that oil, and they want to bring in what they can while this is possible.

Third, they make a very good point out of the importance of the dollar income that these reserves develop for the foreign countries themselves, and this cannot be overestimated because oil in world trade today is probably the largest single trade item, and virtually all the free world in one way or another depends on the movement of substantial quantities of oil out of the export region, and this must be maintained.

Also they have a very good point in the fact that the control of those foreign reserves is absolutely vital to the

maintenance of our position in world affairs. And, last, they make an effective point of the fact that it is the responsibility of those companies owning foreign reserves to protect the U. S. consumer against exorbitant prices. So much for the importers' case.

I think that the domestic producers' case goes roughly along these lines. First of all, a vigorous competitive U. S. oil industry has found and developed most of the world's oil supply.

Second, foreign oil cannot be depended on in time of war. The tankers cannot be expected to get through regularly.

Third, the competitive advantage of foreign oil, in terms of cost of refining and production, weight that oil heavily in the favor of the importing companies.

As for the cost of refining and producing U. S. oil today, no one knows exactly what it is, but I would hazard a guess. It is something around \$1.25 a barrel, and it is rising. That probably compares with, say, ten cents a barrel in the Near East. There have been many years recently when one wildcat well drilled in the Near East found more oil than 50,000 wells drilled in our country.

As I see it, there is one deadly danger to the domestic oil industry. The domestic oil industry is asked to restrict its production in time of peace, but in time of war it is asked to make more and meet the total demand for oil and oil products in this country.

That has the effect of reducing the reserves in this country at a destructive rate in excess of the maximum efficient rate, which means we are losing reserves. And we are doing that at a time when taxes, including excess-profits taxes, take away virtually all the profit from the production of these reserves.

If such a circumstance prevailed for any period of time, I think you could see that the industry in this country would be in a serious condition. No one knows how fast we would lose reserves in terms of overproduction of reservoirs.

For example, many of the wells in east Texas can produce 1,500 barrels a day. They produce twenty. How long we can produce 1,500 barrels a day in time of national emergency without losing, say, 50% of our reserves, no one can foretell.

I believe that this has given rise to the need for some type of international proration. In fact, in my judgment, that is what the national oil policy presupposes, our national oil policy to which all of the companies subscribe, that enough oil shall be brought into the United States to supplement domestic production but not to supplant it.

The problem has been: How can we supplement and not supplant? There are several solutions to this problem in the short term. One is to allow the oil companies to discuss freely the question of prices and rates of production, and that means suspension of the antitrust laws.

Possibly we could do it by imposing a high tariff. I am very much opposed to that because I believe that represents nothing more than a permanent tax on the oil industry, because we are going to import oil and we are going to import increasing quantities of oil over a period of years.

Third, talk has been going on in Washington and in oil

circles of the establishment of a quota system. Without something back of a quota system, I am opposed to that.

I have one pet solution which is not necessarily original with me. I believe that there is possibly a solution to this problem in the near term through the establishment of a U. S. agency which would buy up and take out of production five or six of our major oil fields.

I think the example that I would like to use is the East Texas Field which is thoroughly and completely depleted. It is stratigraphic. The chance for any lower production depth is almost zero.

I would think that that oil could be shut in as a national reserve to be produced only in time of war, and it would be produced, when it was produced, at a rate that might destroy the reserve, but it would not have the dreaded effect of destroying an industry. I believe then it would be possible for importers and exporters to meet through some type of international oil compact or intercountry oil compact, functioning somewhat as the Texas Railroad Commission does, to accept on the one side the offer and match it against the request for purchase.

In the long term, I think the solution of this problem will be found in several rather simple things. As we all understand, one is that we must get away from basing world oil prices on the United States. There will be new basing points developed. Second, a tremendous increase in world demand, which will be with us over our lifetime based primarily on the abundance of low-cost oil, will eventually absorb all of the supply that we now seek.

I would like to make one observation there. Actually the condition of oversupply is chronic in the industry. There are very few times when the industry has ever been undersupplied. The only times it has been undersupplied were those times when they had critical emergencies, such as in 1935-39.

Before World War I, we had approximately 3½ million barrels a day of shut-in production in this country, and it was that production which allowed us to go through the war, building refining and transportation capacity, which literally would supply a war machine that went around the world. So that is the first problem which I think faces the industry that is absolutely vital.

The second I would like to touch on briefly. I have a deep conviction on this, and that is the problem of regulation of price by the Federal Government growing out of the Supreme Court decision in the Phillips Case.

There are many sincere people debating this back and forth, and I will not attempt to argue their position, but I would like to say this: In my judgment there is only one issue involved in that question, and that is whether or not the U. S. governmental agencies shall control commodity prices in this country; more than that, whether they shall control the fuel commodity prices in this country.

Very briefly, it seems to me this whole question arises out of the fact that, until the middle '30's, a tremendous shut-in capacity of gas developed down in Texas, and, over a period of years, pipe lines were developed to bring that gas up into the consuming regions. Those pipe lines were considered utilities, they were service companies, and they were regulated. They were regulated to the extent of what they could charge for their service.

We now have a situation where the Federal Government has been asked to step in, not for the purpose of regulating the charge by the utility, but to regulate to the end of the lowest possible cost to the consumer of the service and of the commodity that is delivered. If that line of reasoning is true, why shouldn't the Government do the same thing in the automotive industry? Isn't the responsibility to buyers of automobiles, radios, or clothes just as great as it is to the buyers of gas?

The awesome thing to me is the fact that the Government has to go so far in establishing its power in order to make that kind of regulation effective. In short, it had to say, regardless of the stipulations of the contracts under which these companies operated, those contracts were null and void, insofar as they pertain to the right of the company to cease delivery of gas.

Now, if the Federal Government can tell a consumer that he may, or rather, tell a producer that he may not stop production of gas to a line, why cannot that same Federal Government tell a consumer of gas that he may not terminate his service and switch to coal or oil or some other or alternate fuel?

The implications of power are terrific. I have no doubt in my mind that the American people can do anything they want to do. That has been demonstrated many times. There is no sanctity of a business or an industry. The Prohibition Act wiped out an industry that employed thousands of people and threw them out without any compensation, and it can be done again.

I just hope in this instance that the word is passed around to the point where the individuals involved know what in turn is involved in this particular question.

It reminds me a little bit of a preacher down in Alabama who was asked by his congregation to pray for water. They needed rain. He made a very fervent prayer from the pulpit and he kept it up for a good long time, more than his normal prayer. And right after the end of the prayer it started to rain.

Three days later it was still raining, and everything had been washed out into the ocean. As he walked out of his cabin, he looked up and said, "Lord, I know I asked for rain, but, Lord, this is ridiculous."

I think that consumers are entitled to protection, but I must say regulation of commodity prices in my judgment is ridiculous.

Very briefly, then, in conclusion, I would like to say that I believe that domestic oil, the domestic oil industry, is an important segment of the energy business. It is one of our most basic industries and one of our most appealing industries from the investment point of view. I believe that it is characterized by tremendous established values generally and almost without exception by good management and with an outstanding growth potential.

I think there are two problems before the industry today. One is the uncontrolled import of foreign oil and the second is the problem of Federal regulation of price and production, because, if it is effected in gas, it will be effected in oil. I believe this is the time for statesmanship in the industry and understanding of the other man's problem, in order that we can reach solutions that will allow a great industry to survive.

FERRO

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First Quarter (1955) Financial High Lights

Consolidated Sales **\$11,174,000 (Up 23%)**
 Consolidated Profit after taxes **606,000 (Up 55%)**
 Consolidated Net Profit per share **.99¢ (vs. 64¢ in 1954)**



*CONDENSED CONSOLIDATED BALANCE SHEET AS OF DECEMBER 31, 1954

ASSETS

Cash & Government Securities.....	\$4,497,527
Notes & Accounts Receivable.....	5,245,398
Inventories.....	8,658,959
Prepaid Expense.....	488,209
Current Assets.....	\$18,890,093
Other Assets, Including Investments, Property, Etc.....	11,919,089
	<u>\$30,809,182</u>

LIABILITIES

Current Liabilities.....	\$7,352,724
Long-Term Liabilities Due After 1955.....	5,180,264
Other Liabilities & Reserves.....	267,990
Shareholders' Equity.....	18,008,204
	<u>\$30,809,182</u>

*Annual Report, Just Released,
Is Available On Request



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Outlook for Banks

Fundamental Factors Causing Bank Mergers and Branch Banking

CHARLES CORTEZ ABBOTT*

IT IS REALLY QUITE AN IMPRESSIVE THING for someone from the academic world, from a small town that is not a financial center, to be invited to participate in this presentation and to find himself a member of a group like this with so many able, well-informed technically competent, good-looking people from the upper-income brackets. I must confess that, when I looked over the program today and looked at the speakers, I was reminded of the passage in 24 Matthew. You may recall that it says there: For wheresoever the carcass is, there will the eagles be gathered together.

My function this afternoon is to discuss the broad background of the extension of branch banking and the burst of bank mergers, to paint with a broad brush, to try to put this range of topics in some perspective, and to some measure, if I can, set the stage for the other speakers. I think the most important single thing that I have to say is that, in my opinion, there is no single cause, not even a small group of causes, that lies behind the increase in branch banking and the current merger movement.

On the contrary, I think the underlying reasons are very numerous. Some are economic, some are technological, some social, some political, some legal. Some of these factors have been long in the making; some are of more recent origin.

Some of these forces are external to the banking system, and, on the other hand, some I think lie within the banking system or even within individual banks. For convenience, I will arrange what I have to say under two headings, and I will deal, first, with the factors that are largely external to the banking system, and, second, with those that have their origin inside the system or even inside particular banks. You will, of course, appreciate that this distinction is in some measure artificial, but it may be useful for purposes of this presentation.

As for the external factors, you are all familiar with the enormous growth in the economy since 1939 and since 1945. Gross national product has approximately tripled in thirty-five years. The price level has doubled or more than doubled. Many business concerns have increased in size four or five—ten times—what you will.

The growth of population has confounded all of the experts, and apparently is going to continue to confound them. Deficit financing of the last twenty years has enormously increased the money supply and the volume of deposits, and these changes have had a great impact on banking and on bankers.

In general, I think we can pick out four or five leading results. There has been a great and a growing need for banking services throughout the United States.

There has been a perfectly stupendous increase in the number of paper transactions—collection cleared, notes collected, and so on—in the banking world. There has been, as any banker is only too eager to tell you, a very considerable rise in costs. In many situations, there has been a need to increase the legal lending limits of individual banks.

Since banking, as an industry, for some years has not been strikingly profitable (I say as an industry—I am not speaking of particular banks), I think it is not very surprising that these changes have led to a steady growth in the number of banking offices since the great depression, and, more recently, to mergers. I say, in my view, it is not surprising that the impact has been, in terms of the number of offices and in mergers in distinction, let us say, an increase in the number of banks, individual banks, or, until rather recently, any appreciable influx of new capital.

Aside from the growth in the economy itself, there have been very great changes within the economy that are perhaps equally or even more important for our purposes this afternoon. The growth of the economy has not been evenly distributed.

*Dean of graduate school of business, University of Virginia.

You are, I think, all familiar with the fact that population and deposits have grown appreciably more rapidly in the West, in the Southwest, and in the South than in New England or the Middle Atlantic Seaboard. Some parts of the country have gained in banking resources, relative to others, very appreciably.

Furthermore, there has been, as you all know, a very great shift in the living habits of the American people. One of the great postwar phenomena has been the movement into suburbs, with an attendant need for banking offices there.

DISPERSAL OF INDUSTRY

We hear a great deal about the dispersal of industry, and I think there is at least an even chance that we will hear even more about it during the next ten years. In terms of banking, this movement means a change pattern, in a geographical sense, in the demand for banking services.

During and since World War II, there have been many instances in this country where industry, big industry, suddenly moved into some relatively stable rural or agricultural area, either because of the establishment of a defense plant or because of the discovery of uranium, or oil, or gas, or some similar influence.

When that happens, the preceding situation, which I might loosely call "an equilibrium situation," is very generally radically disturbed as regards all kinds of facilities and the needs for facilities in that area—schools, sewage disposal, streets, and so on. And, so far as banking is concerned, very commonly this explosive influence in a previously stable situation has suddenly shown the existing banking facilities to be wholly inadequate for the new needs of the community. Now, all these things, I think, add up to a rapidly changing geographical pattern for banking needs, which must in some measure be reflected in the changing pattern of banking resources.

INCOME DISTRIBUTION

I said the growth of the economy has not been spread evenly, and this has been especially true in regard to income distribution—the distribution of income throughout the population. One of the great postwar developments has been the compression of the income pyramid. There has been a great growth in the middle-income brackets—oh, roughly, in the number of persons in the bracket, let us say, of a \$5,000-to-\$7,000 class.

This change in the income distribution has produced a very striking phenomenon which you are all familiar with in other industries: namely, it has developed a mass market for luxury and semiluxury products, and, within limits, I think it is measurably true to say that, historically, banking services have been a quasiluxury for many people in this country.

Consequently, this compression of the income pyramid has had a very substantial impact on banking. We have had a new middle class develop which, on the one hand, needs banking services and, on the other hand, as witness the growth of consumer loans, has represented an enormous outlet for bank funds.

But consumer lending requires locations for banks and

bank offices that are convenient to the consumer, and so here we have another influence leading to this growth of bank offices. In this connection, I think it is worth noting that, for a variety of reasons, consumers in the aggregate, if you look at them as an industry, are much better credit risks than they were prewar, for a variety of reasons.

We have the Fair Employment Act of 1946. We have social security. We have a high and rising national income, which is now a matter of national policy.

We have the striking increase in savings by persons. We have the even more striking increase in the volume of liquid assets in the hands of persons. We have pension plans. All these things and some others mean that consumers have now become more credit-worthy than they were heretofore.

In short, social and Federal policy in the 1940's and 1950's has improved the credit standing of this class of persons. And I think there is an interesting parallel between the position of consumers and the position of agriculture.

Social and Federal policy in the '30's, on the whole, increased the credit-worthiness of agriculture as an industry right across the board, all the way from crop loans to agricultural machinery industries. As a consequence, considerably more money had been lent in that area since the '30's than previously. I think we are seeing a similar development in the field of consumer lending.

TECHNOLOGICAL CHANGES

I could speak of other external factors. There have been technological changes in business machines, in communication. Electronic accounting seems to be just around the corner.

I could point out that inflation has permanently inflated costs, and perhaps taxes, in the banking business as elsewhere. And incidentally, I am doubtful if the full effects of the rising standard of living of the American people has as yet been fully felt in terms of wage and salary costs in banks.

I should point out the long-run effect of cheap money, and the fact that the cost of credit now seems to be fixed as a matter of political decision at a relatively low level—a low level historically at least. This has in some measure reduced the opportunities in wholesale banking, and, conversely, as the record shows, increased the opportunity for the use of credit in the retail field.

SYMPTOMATIC OF LARGER MOVEMENT

I could add that the current movement for bank mergers is only symptomatic of a larger movement throughout all industry. So this tendency in the banking field is in tune with the times. Indeed, there is some evidence that the bank-merger movement started the whole merger movement.

But I would like to point out, before ending this part of my discussion, that many of these external forces have been building up for twenty years or more, and that they are only just now coming into fruition.

But I must go on and discuss some of the forces within the banking system itself. From the point of view of inside

banks or the banking structure, I think there are several things that we can say, and I shall try to run over them rather rapidly.

From this internal point of view, mergers can be looked on as a method that permits stockholders to withdraw from the banking business on better terms than the market permits them to through the sale of their stock. Likewise, if they do not sell the stock in the merged institution, the method permits them to continue in the banking business on somewhat better terms under the new setup.

Studies made by the Philadelphia Federal indicated, I think, quite clearly that the stockholders in a merged bank typically get an appreciable increase in book value, in market price, in marketability, in earnings, and even in dividends. Thus, mergers are, in some measure, a vehicle for improving the status and the standing of the stockholders.

ENDEAVOR TO MEET SHORTAGES

From another point of view, mergers can be looked on as a method whereby the industry endeavors to meet shortages. Pretty generally, since 1939 at least, banks have tended to be short of capital; they have tended to be short of personnel.

One of the recurring topics that I hear discussed, especially among bankers and supervisory authorities, is what is alleged to be the crucial situation of banks—succession, especially in small and medium-sized banks. With the shift in population, I think the banking industry has tended to be chronically short of banking officers, although there has perhaps been more progress toward meeting that specific deficiency than in these other areas.

But, as I see it from the detached point of view of an academician, generally speaking, for close to twenty years, there has been a shortage of bank capital and of competent personnel. Mergers in some measure are a means of solving these problems.

ANSWER TO RISING COSTS

From still another point of view, mergers and the increase in the number of banking offices and branches, I think, can be looked on as an answer to rising costs, or at least an attempted answer. With a larger volume in some situations, management can make fuller utilization of facilities and spread overhead. And, if we count wages and salaries as overhead, a very high percentage of the costs in the banking business are overhead costs.

This is particularly important because costs have been rising, as I said a moment ago. It seems to me probably that, with the insatiable thirst of the American public for a rising standard of living, this is an admirable trait.

Bank costs are likely to continue to rise. At the same time, the price of bank credit of the product that the bank sells has not been quite free to rise, at least not at all times during the last twenty years. The bankers have not operated in what I could characterize as a free market in the real sense of the word.

Finally, I should like to note that, in many instances, I think that mergers and the increase in the number of branches are a manifestation of competition. This competi-

tion takes many forms. Sometimes I think we can interpret a merger as being a way in which a bank that has in some measure fallen behind can catch up or even improve its place in the industry: with reference to the volume of deposits, its capital position, the types of business it has.

Again it seems to me that, when a bank expands the number of its banking offices, it is clearly competing more vigorously than before for deposits, and sometimes for new types of business in which it was not previously engaged. Whether it is cheaper for a bank to establish its own branches or to merge when it wishes to increase the number of banking offices depends a good deal on the type of area that is involved and on other considerations.

Sometimes I think that a merger is most logically viewed as an effort to acquire a new type of business—trust business, some kind of securities business, consumer credit business, and so on—or as a device for diversifying the asset pattern. This kind of effort it seems to me, is another form of competition.

Finally, when small banks are absorbed by larger institutions, very generally, or at least so my banking friends tell me, management procedures and services to the public are improved. This seems to me also another form of competition, in that it represents an effort to make these facilities and these resources more profitable and productive than they were before.

SUMMARY

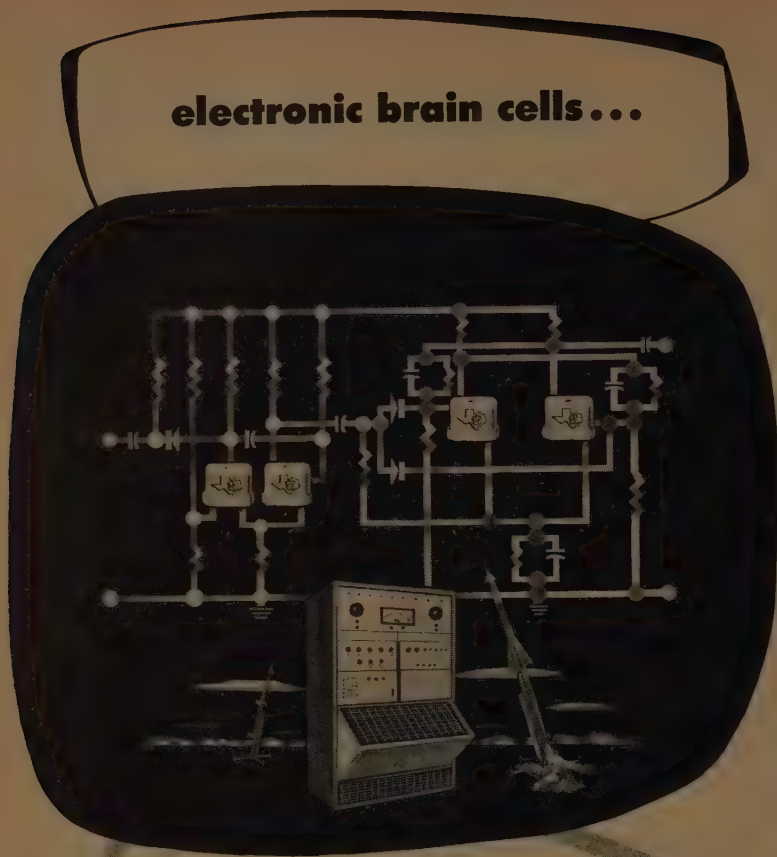
In conclusion, I would like to summarize. A great many factors have led to this current realignment and readjustment in the commercial banking world. Some are deep-seated, some are of current import, some are external, some internal, some are economic, social, political, technological, in their nature.

By and large, the current changes which we see going on, I think, are to be interpreted as the adaptation of commercial banking to a changed and to a changing environment—and this is healthy. It is a sign of vitality in the industry. In business, as in the biological world, the organism that does not adapt itself to a changing environment dies.

Probably some of these changes are long overdue, but certainly what we are seeing today is the breakup of what one of my friends described as the status quo that prevailed for so long before World War II. So far the evidence of readjustment in commercial banking is taking the form very largely of mergers and of the growth in branch banking, and in the experimentation with and addition of new banking services. This is the point on which I will not dwell today.

These changes I think on the whole are helpful. I am not sure that they are going to be complete solutions to the problems. It seems to me probable that the factors causing this ferment in commercial banking have not yet spent their force, and that, as the industry adapts itself to the new situation in which it finds itself, not only will these types of change which we are discussing today continue, but very possibly other kinds of change will also appear on the scene.

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Causes of Changing Deposit Trends

WALTER J. BRAUNSCHWEIGER *

IT IS A REAL PLEASURE for me to be here today, especially since your chairman suggested that I might, in addition to talking about the change of deposit trends, say a few words about the growth of California, and of course, the growth of the Bank of America which is parallel with that of the great state.

Some very great changes have taken place in the type of deposits and the place where those deposits are domiciled. I have divided my remarks under four headings, and I will speak to you briefly on each.

First, the shift of the population of the United States has brought about a change in deposits. The diversification of industry throughout the Nation, the tremendous amount of expenditures of our Government in defense, and that very important subject, the change in the income of the family unit, have all brought about a change of the type of savings and deposits. All these items have created much keener competition among banks and financial institutions.

All of the banks throughout the country have gained in deposits in the past fifteen years. I want to quote a few figures which will give to you that indicated growth and change. I have taken the total figures of the Federal Reserve System and member banks in the Federal Reserve System because they are available.

In 1939, the banks in the New York Federal Reserve District enjoyed 36% of all of the deposits of the entire Federal Reserve System. In June of 1954, that percentage had declined to 27.5%.

A similar situation exists in the Boston and Philadelphia Reserve Districts, while elsewhere throughout the country the trend has been otherwise. During this period of some fifteen years, the deposits of the New York banks have increased 150%, but that was against an increase throughout the entire Federal Reserve System of 229%.

That difference has been caused by the growth in these new areas. For instance, Kansas City increased from 3% to 4.5%, and their deposits increased 376% against the national average of 229%. Dallas, Texas, moved from 2.4% to 4.5%, and the total deposits there increased 496%.

And the Twelfth Federal Reserve District, the eight Western States, all of which enjoy statewide branch banking, changed from 7.9% to 11.9%, with a gain of 342%. So, although we have had a gain of 229% throughout the Nation, it has not been evenly apportioned, but the larger increases have followed the trend of population and of industry.

After World War II in 1946, national concerns began scrutinizing their facilities to see how they were going to be able to manufacture the goods that the people demanded. When they discovered this change in population that had taken place during the previous six or eight years, then the decision to be made was whether they should increase their

plant capacity in Cleveland, Pittsburgh, or Philadelphia, or Chicago, or whether they should have a branch plant in Atlanta, Dallas, or on the Pacific Coast. The result has been that, because of labor conditions, better housing facilities, and the desire of the workmen, they have established branch plants.

Now, when those plants were established, the money for them was not used from local sources. That money came from the parent corporation, either out of their working capital or from borrowed monies that they would obtain in the financial centers. So all of these new monies came into these areas in vast amounts.

In addition to the new monies that corporations have furnished to these areas, the people who were attracted to them by new jobs brought their life savings to their new homes. So there has been a double movement of money from corporations and from individuals.

To give you one example of that, in the state of California, there has been established 7,000 new manufacturing plants since 1946. The majority of those have been branches of national companies. Then, in turn, smaller industry comes along and supplies those large plants with many of the things that the larger manufacturers, especially the aircraft companies, require.

The president of the Southern Pacific Railroad made a statement a few months ago that his railroad had enjoyed the establishment of one new manufacturing plant every day since 1946. So that gives us some indication of the diversification of industry and the shift of industry from the old-time industrial centers to the smaller communities throughout the Nation.

For the biggest factor that has created these deposit changes, I am going to refer to a study that has just been completed within the last month by the J. Walter Thompson Company. They made a very careful survey throughout the Nation of past and present income of the various family groups.

In 1956 they estimate from this survey that there may be 6.5 times as many consumer spending units with incomes of over \$3,000 as there were in the prewar period of 1941. Just what does that mean?

In 1941 there were 39 million consumer spending units, meaning families, and, of that 39 million, 14% had incomes of \$3,000 to \$5,000, and above \$5,000. In 1951, that had increased to 51%.

In other words, during that period of time, those who had that average income in what we call the higher bracket increased from 14% to 51%. Last year, in 1954, it was 53%; and it is estimated that in 1956 it will be 67% of our income population that will be in that group.

Out of 56 million family units, there are only about 5 million that have an income over \$7,500 a year. So the great spending power of this country is in the group between \$3,000 and \$7,500.

*Executive vice-president, Bank of America NT & SA.

Where is that money going? We all know that spendable income is running close to \$300 million.

In 1941, the middle-income family—and that meant in those days those who had an income from \$1,000 to \$3,000, or an average of \$1,458—had \$439 left over from that \$1,458 for what is termed surplus income for discretionary spending or savings. Their taxes in 1941 in that group, were \$2 a year, but they had \$439 left over for savings.

What has happened since then until 1955? That income has increased from \$1,458 to \$4,500 average, and, out of the \$4,500, they have a discretionary spending power and savings of \$2,325, or more than five times the amount they had previously.

That is the average individual who buys things other than basic necessities. When I speak of the basic factors, I mean food, clothing, housing, and household operation and expense; the others are luxuries, like entertainment, and vacations, and savings.

Now, with \$2,326 out of that income of \$4,500, there is a tendency to save more money, and so the average saver who wants a savings account as a reserve fund now has close to \$1,000, against \$350 previously.

So, it is a simple procedure to figure out where this money is coming from. If a branch bank serves 10,000 in a community, it is going to have three times as much in deposits from that group as it had in years gone by.

So it is quite essential for metropolitan banks to go to the communities where these people live and work if they are going to enjoy the deposits of the people. Otherwise, these individuals will use their funds in some other way.

That factor has been one of the largest and greatest causes of this change of income. The commercial banks have not benefited to the same extent as the mutual savings banks, the building and loan, and other organizations. And why?

Because the mutual savings banks and the building and loan associations are not concerned with the payment of dividends to their stockholders, and their tax situation is much less acute than that of the commercial bank. So they have been in a position to spend much more money on advertising and more elaborate quarters in these small communities, and there exists a very keen competitive situation.

In turn, they pay 2.5%, 3%, or 3.5% interest on deposit accounts. They are often called deposit accounts. Of course, you know there are various phases of that. Some of them are stock ownership, and others are mutual funds.

But they have had a much larger percentage growth than the commercial banks who have savings deposits. I would like to give you just one or two figures that show the trend.

The total of mutual savings banks in 1939 was \$10 billion; at the end of 1953 it was \$24 billion. The savings and loan associations in 1939 had \$4 billion; at the end of 1953 they had \$22 billion. The combined total is \$46 billion.

The savings in commercial banks totaled \$14 billion in 1939, and today they are \$41 billion. So you see that, from a total of \$10 billion in 1939, the mutual savings banks and savings and loan associations have gone to \$46 billion, while the savings in commercial banks, which had \$14 billion in 1939, moved up to \$41 billion.

So the growth has been in the savings factors. That is another reason why more commercial banks are catering to the savings deposits of the individual.

We, in California, have been more favored because of the fact that we have been permitted to have a savings department in practically all banks in California. The trend there has not been the same as in the Nation as a whole.

Our commercial banks in 1939 had \$2.5 billion of savings deposits, and they have \$8 billion today, while the savings and loan and the mutual savings banks have \$3 billion. So, the commercial banks there have \$8 billion as against \$3 billion for the savings and loans, and the trend has not been the same.

Another reason why there will be greater mergers; why there will be more branch banks throughout the Nation is that the time has arrived when the average individual wants banking service. We pride ourselves on having 52 different banking services in our bank, and every branch bank has those 52 services.

So, an individual has many methods of borrowing, many methods of saving, with trust service and the various factors. It was the founder of our bank, Mr. Giannini, who believed that a bank should be a department store of finance, and not just a depository for funds. Therefore, as we go along, you will find that banking throughout the United States is going to tend, in our belief, toward more branch banking or services by branch holding companies and institutions that are going to bring the services to the people.

We have made a survey every year since 1946 to see what people thought of banking in general and of the Bank of America in particular. One question we always ask in each of these surveys is: Why do you do business with us or with another bank?

It is a surprising thing that 52% of all the people who do banking business do it with a particular bank because of convenience. So, you see, the factor of location is a very important one.

Another factor is that these deposits accumulate in these areas, and the funds are movable to other areas. It may possibly be a residential community or a farming community. The funds accumulated in this branch may amount to \$20 million, and the branch may only have the possibility of loaning \$3 million or \$4 million. There is no manufacturing to any great extent, and there isn't the demand for funds.

We all know that, if we have \$20 million in deposits, we are paying interest on half of these deposits in the savings department, and we are only able to loan 25% or 30% of the funds, we are not going to make much money for our stockholders. But, if we can loan those funds to some of the other branches, we are going to loan it to them, since the branches are all one institution.

So those funds are available for use in another area. That has been the great factor for the West Coast banks. That is why their earnings have run to 8%, and their capital funds to 14.4%.

Today we loan \$100 million to the cotton industry in the San Joaquin Valley. Ninety days from now it will be loaned to the Imperial Valley for the harvest of truck gar-

dening crops, and three months later for the canning of the vegetables, and later for some other manufacturing activity.

When this consumer credit is reduced by people not buying, then the merchant has increased inventory and receivables, and he borrows. So, there is a leveling off of loans, which is a great advantage in a branch banking system.

We believe the day will come when the public will realize that it is able to have more service at lesser cost through this system of branch banking. People will demand of their legislators that the laws in the various states be changed so as to permit statewide branch banking. We think our experience in the eight Western States, and especially California, has fully demonstrated that, and that it will take place.

Now, with all these increased opportunities, the banks have been privileged to lend money in various ways, and consumer credit has been an important factor. Why should the conductor on a railway pay 12, 15, or 20% interest when he is required to borrow a few hundred dollars because his wife is in the hospital, or because he wants to buy a new automobile or build an addition to his home?

Why should he not have the privilege of going to a bank and borrowing it just like any merchant, if he is a savings depositor or has a checking account? He should have that privilege, and so today most of the banks throughout the country are lending money for consumer use.

That is a very profitable thing for the banks, and it is a very good thing for the economy, because the millions of dollars that are saved to the consumer, which he would pay out in high interest rates to loan companies and finance companies, are available to that consumer to buy other goods. Therefore both are benefited, the consumer, and the banking institution through its increased earnings.

Last week I was reading in the *U.S. News and World Report*, about an interview with Dr. Arthur F. Burns of the President's economic staff. One question he was asked was: "Isn't all the installment buying a weak point or danger point?"

His answer was: "I doubt it. One thing that we have been very slow in learning is that, speaking broadly, the American consumer is the best credit risk in the world.

"We learned this gradually. A small number of enterprising businessmen led the way. Afterward the bankers learned that the consumer credit could be every bit as sound as commercial credit.

"Some still approach the question of consumer debt with a moral preconception rather than with the objective economic yardstick. So, you will find today that most of the banks have a substantial part of their loan portfolio in consumer credit, which is a very sound credit."

We have found it so. If I may make a personal reference, we have loaned over \$16 billion since 1935 with a loss ratio of 19/100 of 1% on the entire amount—less than one-fifth of 1%. So the consumer is a good credit risk.

I want to make one further reference. The question raised about branch banking is: Is it not too competitive? Will not all of these branches be competing with one another, and will not that affect their earnings and their future?

We can rest assured that this will not happen. First, the

banking institutions are going to operate every unit on a profitable basis, or they will consolidate units or close them.

Second, the banking business is one business that is regulated by some very strong authorities: the Comptroller of the Currency, in reference to national banks; the Federal Reserve Board, in reference to all member banks of the Federal Reserve System; and the superintendent of banks of the various states. And these three Government agencies co-operate fully in determining whether or not a competing bank should be allowed, whether it be a branch or a unit bank.

It is quite difficult many times to convince these agencies that there is an opportunity for a new branch bank. There has always been a tendency to limit the number of banking offices, and that has increased over these years. One example of where it was worked perfectly, but held in check very closely, is on the West Coast.

Now, we have had an increase in population in California of over 50% over a period of the last fourteen years. In 1940 there were 204 banks in California with 151 offices. Now there are 175 banks with 1,298 offices, an increase of 247 offices in the state.

In 1940 each banking office served 6,400 people, whereas today, as a result of the increase in population, that same banking office has to serve 9,400 people. So we see that the authorities regulate competition quite strongly.

Today in California—and I am sure it is so in New York also—competition in the banking field is keener than it has ever been. When a merger takes place, the competitors all get busy to keep the business they have and to secure new business.

Every bank is seeking new services to attract customers. So mergers and branch banking do not lessen competition but make it keener, as has been proven on the West Coast. In conclusion, may I sum up with the following three points which highlight this changing deposit trend.

1. Banks no longer try to be exclusive about selecting their customers. They want to serve all groups equally well, and to make banks public-service institutions of the finest type.

2. There is competition, not only among banks but from many other types of lenders who have been growing at a rapid rate in recent years.

3. The requirements of communities we serve are changing, as a result of higher levels of income, change in income distribution, the greater movements of population and industry, and similar factors.

Finally, it seems to me that the ability and willingness of a bank to adapt its lending policies to changing conditions and requirements is one measure of the dynamic strength of a banking system, and our private enterprise system of banking is meeting this test very well. As conditions change in the future, I am sure that banking will adapt its lending policies accordingly.

Even more important, I am sure that bankers will lead in recognizing the need for new ways of doing things. We will not just drift with the tide, or follow the tracks of more imaginative competitors. We will be at the forefront. None of us can afford to be satisfied with less.

Investment Significance of Mergers, Branch Banking, and Changing Deposit Trends

MORRIS A. SCHAPIRO*

THE banking scene has come into wide view suddenly. As the merger trend gathered fresh forces and culminated in the series of mergers here in New York City last fall, we as investment analysts had before us the problem of weighing the meaning of the trend, the forces behind it, the prospects ahead. I think we can say that, only with the passage of much time, can we assess the developments that have taken place within recent months.

BANKING ASSETS

For example, beginning with the Chemical Corn merger, and including Chase and Manhattan, and Public and the Bankers, and First National and National City—mergers and liquidations—the sum total of the banking institutions involved here in New York City is about \$7.25 billion of banking assets. That is about 25% of the total banking resources in Manhattan. The impact of the series of mergers reaches far, at the director level, management, personnel, customers, individuals, partnership and corporations, national customers and international customers, and corresponding banking relations around the country and around the world.

Its impact is even stronger on banks that have not participated in the merger trend, and there begins the background of added uncertainty. Moreover, what happens in New York is watched very closely by banks around the United States.

NONBANK SOURCES

Again, the impact of these developments reaches into nonbank sources—in the Halls of Congress, observers, the banking authorities. There are questions. The rapidity of these developments, the magnitude of the mergers, are throwing into fresh view old questions of policy in banking, in Government, among the public.

There are both sides. There are opinions. There are opposite opinions, earnestly presented. We, as investment analysts, must recognize that the resolution of these opinions, of these differences—and much time must pass in resolving them—will constitute the most important factors that will decide the long-time future of bank stock investment.

ADDED VITALITY TO INDUSTRY

There are those who submit that branch banking and mergers have added vitality to the industry. There are those who contend that branch banking and mergers are an evil thing. Meanwhile, the general public asks: Why? Why,

at this time of unprecedented economic activity are mergers and liquidations reducing the number of banks?

A ready answer has been offered, that banks are merging because of monopolistic intent. The critics have emphasized the concentration of banking resources, stating that the 100 largest commercial banks hold 46% of all deposits.

According to the FDIC, that is the figure, but what the critics should state is that in 1940, before World War II, the figure was 58%. There is less concentration today despite the merger trend.

MUST ATTRACT CAPITAL

As financial analysts, we know that a bank like any other business, must earn enough to attract capital. We are neither lost in the political smog, nor are we beguiled by the tradition and prestige of banking. Facts are what we live on.

But, before answering the question, "What are the most striking signs of a major trend?", as has been pointed out, we can see around the country that big banking is becoming neighborhood banking. This, perhaps, is more striking here in New York where so-called "Wall Street" banks are moving on to Main Street.

ONE EXAMPLE

As one example, let us go to East 149 Street and Third Avenue in the Bronx, an active trading community. We find five banks that have head offices on Wall Street: National City, Chase, Chemical, the Bankers, Manufacturers. The combined capital is \$1.7 billion.

National City established its branch in 1928. The mergers brought the other four. Individuals and businesses in the Bronx now enjoy the protection of large capital and the convenience of up-to-date facilities.

There are other examples. In Flushing, Queens, there are four of these Wall Street banks, with a capital of \$1.5 billion. Of the four, three came through merger.

Then again, in the North Shore Long Island area, in the community of Bayside, there are two Wall Street banks with capital funds of \$750 million. Bayside is now getting metropolitan service.

NEW COMPETITIVE FORCES

The merger trend has released new competitive forces throughout the entire area, bringing to people and to businesses more banking service at lower cost. Bank customers find today that competition for their patronage is intensified. This is important, because we, as analysts, must ourselves weigh on the scale whether the public interest is being served.

*M. A. Schapiro & Company.

But how did all this come about? As we know, and as has already been pointed out, banking has been affected by rising costs and high taxation. These factors are inevitable in the financial inflation of our times, but to us as financial analysts they are of special importance in understanding and weighing the investment significance of changing deposit trends, of branch banking and mergers.

UNABLE TO RAISE PRICES

Banks are unable to raise prices, as industry has done, to meet these challenges. The price of their product, money and credit, is influenced to the greatest extent by the decisions of the Treasury and the Federal Reserve, whose operations in the money market control its cost and availability.

Within the limits thus set, 14,000 insured commercial banks compete not only with one another, but with non-bank lenders as well, insurance companies, savings banks, savings and loan associations, pensions and other funds, individual and corporate lenders. The investment markets, of course, are always a prime source of funds to large borrowers. Parenthetically, this vast and growing complex of nonbank lenders would be an impossible hurdle to overcome, if commercial banks were seeking to create a money monopoly.

COMMERCIAL BANKS IN A SQUEEZE

Commercial banks, we find, have been and are in a squeeze which is tighter for those wholesale banks that lend money at rates that are most affected by the regulated money market. To work out of the squeeze, banks have been forced to increase and diversify their business and reduce costs.

To do this, they must reach a wider public, do retail business as well as wholesale, and give more service to more people at less cost. It is the wider operation that makes possible new efficiencies, as larger volume and increased revenues justify modern equipment, and hence, ultimately lower unit costs.

We know that small banks are less able to use, or cannot afford, expensive electronic equipment. Only about ten days ago, the American Bankers Association representative stated before a Senate subcommittee on labor the adverse impact of increasing minimum wages or revising upward minimum wages in small banks.

The same financial inflation that brought high costs and taxes also created enormous expansion of bank deposits. These deposits have experienced wide diffusion throughout the entire economy.

The growth in deposit totals has been accompanied by a shift of funds in new areas of industrial activity and population expansion. The dispersion of industry and shift of population reflect social, political, and economic forces that have been operating in the last twenty years.

Our expanding national income is becoming broader, and this trend, too, has been marked by regional shifts in income. Small cities have become big ones, and from all cities there is some migration to the suburbs.

The First National Bank of Boston last month

pointed out that, from 1940 to 1953, the suburban population increased 67%, compared with only 20% for the total population. When people move, deposits move, and, like other business, banks too must follow their customers.

So when, it is stated by some that branch banking is evil, in the eyes of others it has become a basic in modern banking, and mergers are an economical means of acquiring already established branches. Mergers give the continuing institution broader public contact, increased deposits, and large capital funds, opportunities for new business, and diversification in operations and income.

INTERESTED IN FIGURES

As financial analysts, we are interested in figures, of course, and I would like to touch on one phase—the impact of rising costs on the operating figures of commercial banks for the last ten years.

First, we will consider the banks outside of New York City, and later we will touch on the banks in New York. I will refer to the group of 6,639 banks, quite representative members of the Federal Reserve System located outside of New York City.

OPERATING COSTS INCREASED

The operating costs of this broad group of banks has increased from \$1 billion to \$2.5 billion, approximately 143%. Deposits have grown from \$89 billion in 1945 to \$121 billion in 1954, showing a gain of 36%.

We should relate these figures and weigh the impact on operating requirements of this group of banks. We find that the minimum rate of interest required by this group of banks on their employed funds, the total of loans and investments, has just about doubled from 1% to nearly 2%.

That is, if all the banks were able to realize on their funds last year was 2%, they would break even; there would be no earnings and no taxes to pay. Of course, there is an average picture, but those banks operating in marked growth areas have so far been able to do well largely because of their greater-than-average increase in deposits, and therefore, in their total loans and investments.

PRESSURES DIFFICULT TO MEET

On the other hand, for those banks with less-than-average growth, the pressures of high costs and high taxes have been increasingly difficult to meet. The fact is that even smaller banks with strong deposit growth, doing a retail business, have generally done better than large, heavily capitalized banks doing a wholesale business.

Understandably, from the standpoint of operating conditions, there are internal factors and external factors, and this is within the framework of internal factors. Banks have turned to mergers as one solution of their problems. There have been 742 bank mergers from 1948 through 1954, and 1955 has already witnessed mergers impressive in both number and size.

Here in New York, and in the whole Metropolitan Area, the impact of costs and taxes falls hardest. In New York is 23% of the country's banking capital—\$2.8 billion, con-

centrated in few hands—and, traditionally, banks are big business.

Let us look at the figures. The deposits in the same period—and you recall that they were up 36% for banks outside New York—are now down. I mean in dollars. They are down from \$27.7 billion to \$26.6, nearly 4%.

In the same period, the operating expenses for these banks rose from \$216 million to \$428 million. These expenses do not include income taxes. They have nearly doubled, 98%; and the break-even yield of this historically low-cost group of banks has increased from a half of 1% to 1¼%.

A MAJOR REALIGNMENT

The resulting pressures have forced a major realignment of the city's banking structure through mergers and liquidations. Managements had to decide the question of tradition versus necessity and opportunity.

They had to ask: "Are we to remain a blue-ribbon bank, serving a limited clientele, or shall we cross the tracks and become a bank of little business as well as big business. Are we to continue in the Wall Street 'jungle' making large loans at destructive rates, or shall we broaden our sphere through branch operations and extend our services to a larger public?" We know that answers have been forthcoming.

EARNING POWER

The reason bank shares were quoted in the market place at a discount from book values was, of course, their earning power. This discount intensified the merger trend. Since merger values were higher than book values, and hence much greater than market values, shareholders found merger proposals irresistible.

The membership in the New York City Clearing House Association is down from 25 in 1946 to 15 today. The extent of these developments can perhaps be best visualized when we consider that the ten that were merged had 177 banking offices. There were gross deposits of \$8 billion, and \$700 million of capital funds. Now, with the eliminations we have seen, the earning power of the continuing banks as a group is still low, somewhat better than 7%, as against 6.5% back in 1946.

ECONOMIES RESULTING

There will be economies resulting from elimination of duplications, new efficiencies now possible because of the mergers, and all these are bound to affect future operating results favorably. Nevertheless, the ability of the large metropolitan banks to improve their earnings is limited by several factors.

In the first place, we must consider the traditional strong deposit-capital ratio, currently ten to one. Banks outside of New York, say with a deposit-capital ratio of fifteen to one, enjoy, in effect, 50% more deposits per dollar of bank capital and are subject to lower reserve requirements than in New York. The higher reserve requirements in New York, which are admittedly outmoded, are discriminatory and handicap the banks.

But an important and major factor limiting New York City banks as a group is the restriction imposed by the banking laws of the State of New York which confine bank branches within the city limits. The rapid growth in the suburban areas around New York is typical of the national trend. The movement of people and business to the suburbs has been especially marked and is bound to continue.

To illustrate, if we consider the adjacent counties of Westchester and Nassau, we find that commercial-bank deposits of the two counties combined have come up from \$350 million to \$1,550 million in 1954, showing an increase of 340%. New York City is down, but Nassau and Westchester are up 340%. This total of \$1,550 million of these two counties approximates the commercial deposits of Houston, Texas, or Portland, Oregon, which rank 11 and 12 among the cities of the country.

New York City, as a financial sun, has spun off a city like Houston or Portland, and there is every indication that growth in these and other adjacent counties will continue. The New York City banks are precluded by legislation from following the business and population movement of today.

Let us consider another facet. The impact of the Thruway and related improvements is bound to be far-reaching in accelerated trends and industrial activity throughout the state. With foresight, New York City's leading bank-holding company last December raised \$25 million through sale of preferred stock and authorized 10 million additional common shares.

NEW YORK BANKS' PARTICIPATION

Bank mergers in New York City so far have not answered the basic question of New York City banks' participation in the future growth of the state of New York. The banking authorities are aware of the changing situation.

You will be interested to know that the State Legislature in its last session authorized a study of the banking law with the view to possible recodification. Such a study naturally will consider those sections of the law that confine bank branches within their present limits.

We, as financial analysts, when comparing banks in New York City with banks in California, must remember that, though statewide banking is not yet possible in New York, the matter has long been under consideration. In 1932, and again in 1933, the then Superintendent of Banks recommended statewide branch banking for banks and trust companies having capital and surplus funds of \$25 million and more.

HAVE ENLIVENED INVESTMENT INTEREST

As financial analysts in the field of investment banking, we know that bank mergers have enlivened investment interest in the industry. With the merger trend, the discount from book value has narrowed and, in many instances, disappeared. Understandably, bank managements are now more conscious of the quoted value of their shares, and more liberal dividend policies can be noted.

We are all agreed that the merger trend has helped the stockholder who for a long time was forgotten. Merger

values have dramatically affected investment values of the shares of participating banks. With this development, shareholders, too, are everywhere recognizing the importance of the merger trend to the long-term value of their holdings.

Mergers give shareholders an opportunity to withdraw on terms less destructive than in the market place. They give them the opportunity to reconsider their position in the industry and continue on a more favorable basis. Shareholders know that, in recent years, the most profitable bank shares to have held were those of banks that were sold or merged, because merger brought a premium above book value for shares which were previously quoted at a discount from their book value.

CONSIDERATION TO SHAREHOLDERS

I think we should take note that the consideration to shareholders of the bank which is to be sold or merged represents the net appraised book value, and the net appraised book value has proved to be greater than the published book value, because values are appraised at current conditions, current markets, whereas these assets carried depreciated values. I should say the consideration represents the net appraisal value plus a premium, sometimes small, sometimes large, for good will and earning power.

SALE OR LIQUIDATION

When the transaction is effected by cash, as with the First National Bank and National City, the Bronx County Trust Company and the Manhattan, the transaction may be deemed a sale or liquidation, the tax consequences of which must be weighed by the interested parties. We know that the continuing bank or the acquiring bank benefits.

As against a severance or termination by sale, there is a continuity of ownership when the consideration is effected through shares, additional shares, or through stock. The transaction then becomes a tax-free reorganization and may be deemed a merger.

In such a transaction, the assets of the bank that is being merged are received at their tax cost, at their tax base. So the transaction is tax-free at the bank level, and it is tax-free at the shareholder level.

Banks that have expanded their business through mergers and developed branch systems have concurrently experienced deposit growth and enlarged capital, and have enhanced their competitive positions. The record shows that those banks which by reason of these policies have been able to follow population and business trends, serving little as well as big business, have grown and succeeded in doing a better job for their shareholders. The record of the Bank of America, evidenced today by the rate of earnings on stockholders' equity, is proof of this.

Coming back to legislative halls and the charges and complaints that are made, I would like to touch on the protection that a dual system of banking affords, insofar as the public interest is concerned. But, before that, we cannot consider the present and prospective situation without accepting the statement that commercial banking is only in

the beginning of a readjustment that is inevitable in a rapidly changing world.

The economic, social, and political forces that have shaped the banking situation are bound to persist. High costs are with us. So are taxes. Population, income, and deposit shifts will continue.

What about future bank mergers? The trend might be interrupted for some reason, now unforeseen, or perhaps it will be continued with mergers of even greater magnitude.

We know that the movement is already under close official scrutiny to determine how the public interest is affected. All of us want vigorous competition, not protected monopoly.

It is evident in California, and it is evident here, that developments to date have intensified competition for the public's patronage and not brought monopolistic conditions. This is demonstrated on East 149 Street, as it is elsewhere in other places throughout the country.

Bank customers are receiving more service, more efficiently, and at steadily lower costs. We should remember that, despite the sharp rise in the cost of living since before World War II, the price of money to the small borrower is generally low, and that is due primarily to the entry of large banks into the retail field.

The charge has been made that, unless the merger trend is halted, we will soon be down to a mere handful of giant banks as in other countries. Even if this politically inspired absurdity were in prospect, the public, as has already been pointed out, would be protected from monopoly by a vast front of nonbank lenders.

SYSTEM PROTECTS THE PUBLIC

We should consider how our dual system of banking, state and national, serves to protect the public from the danger of both monopoly and nationalization. So long as the Comptroller of the Currency and the various state banking departments continue to exercise parallel powers, we are assured of 48 banks operating under state charters and 48 additional under national charters, a total of 96, which is more than a mere handful, and it would be the minimum unless states rights were violated.

I must say that no serious observer, of course, believes that any such fantastic situation is in prospect. But all these changes which have been brought to your attention, and the underlying reasons, place new importance on long-range thinking on the part of the banking authorities, legislators, bankers, and investors.

Of course, the public interest must be safeguarded. But commercial banks—and we are looking on the question as investment analysts with the future of investments at stake, held in industry by our clients—commercial banks must be allowed to make the necessary adjustments to strengthen their future as privately owned enterprises.

In conclusion, bank mergers, subject always to official approval, are a healthy development. They allow energetic, inventive managements to function more efficiently and bring better banking to a wider public. The merger trend has added vitality to the industry.

Annual Dinner

CHAIRMAN

MR. DUTTON MOREHOUSE

Brown Brothers, Harriman & Company

Shelby Cullom Davis: Thank you, Dutton Morehouse, and thank you, ladies and gentlemen, for the great honor you have bestowed upon me. You know, it is a real thrill for me to be in this spot, for I had the pleasure of presiding at the first annual banquet of the National Federation, back in 1948, and of introducing the Founding Father and first President, Ken Woodworth, who I am happy to say is here tonight.

My speech is going to be very brief, and reminiscent of the time some years ago when I asked a really accomplished and graceful public speaker—like your President here—how he knew when to stop. "It is easy," he said. "When you see people in the audience looking at their watches, you have nothing to worry about; you're still in the clear. But, when you see them shaking their watches—and listening to hear whether they're still running—well then it is time to sit down."

I am going to pretend that you are doing just that now—and simply say again: Thank you all very much. And a year from now I hope you will still feel that I deserved the honor.

May I take one minute, and put on my other hat, as general Convention chairman, to thank particularly our Stock Exchange and banking friends for their magnificent hospitality yesterday and this afternoon, to thank all the corporations and their officials who have contributed so much to so many of us, to thank our member Societies for their co-operation and attendance, to thank our own New Yorkers who conceived and executed the arrangements for this Convention.

This is only a partial list: Bill White, the general Convention co-chairman, who ran that successful luncheon this noon. Helen Slade, the chairman of the Arrangements Committee—no Helen, no Convention! Gerald Wilstead, vice-chairman, and Joe Galanis, treasurer. Sturgis Macomber, chairman, and Jerry Jenks, vice-chairman of the successful Program Committee. Nat Bowen, our top adviser and strategist, who really advised!

John Sullivan in charge of special meetings. John Spurdle who did the management conferences, Pierre Bretey on railroads, Longley Walker on utilities. Larry Kahn, our official consultant—whom we consulted constantly. Pat James whose field trips you will enjoy tomorrow and Thursday, Shelly Pierce in publicity, and

Helen Dickinson in charge of ladies program—and all the others who helped—thank you all most deeply. Thank you all very much, ladies and gentlemen, and, as they say in the gracious South, come again right soon.

And now, in the absence of our immediate past President, Samuel B. Jones due to illness, may I take the liberty of calling on his predecessor, my friend Richard W. Lambourne of San Francisco, for an important announcement.

* * *

Richard W. Lambourne: Fellow analysts and guests, it is traditional in the Federation to honor the outgoing President with a symbol of our esteem and gratitude. This year we acknowledge the exceptionally fine leadership of Dutton Morehouse of Brown Brothers, Harriman & Company.

I shall not endeavor to cover all facets of his outstanding career in the Federation. It would require far more time than we have on this occasion. But I can give you an epitome of it—he has grown with the Federation every step of the way from its beginning.

In all his many activities within the National Federation his judgment has always commanded deep respect. In his official relations with those outside the Federation he has gained us added prestige. The analyst profession is indeed a great beneficiary of his unstinting work in our behalf.

It is fitting that a member of the oldest Society in the Federation—Chicago—should be honored at this gathering. His presidency of that Society back in 1947–48 turned out to be only one of many stepping stones in his subsequent career toward the office that he will now retire from on July 1 with such high distinction.

The Federation, however, will continue to have the advantage of his wisdom as a member of the Executive Committee in the coming year. Indeed we hope that he will keep an active role for many years ahead to help us solve the numerous problems facing the Federation as it grows to its ultimate goals.

It is fitting, too, that we extend our thanks to Dutton's wife, Louise, a lovely lady who has helped to share the burden of his responsibilities.

Dutton, we are happy to give you this traditional sterling

silver plaque. We want you to hang it high on the wall for all to see. It is inscribed:

PRESENTED BY THE
NATIONAL FEDERATION OF FINANCIAL
ANALYSTS SOCIETIES

TO

M. DUTTON MOREHOUSE
WITH APPRECIATION FOR SERVICES AS PRESIDENT
DURING THE YEAR 1954 TO 1955

* * *

M. Dutton Morehouse: When I took office, it was my determination to carry on the momentum of the Federation built up by my predecessors. It has thus been gratifying that the major accomplishments of the past year represented the completion of projects begun in prior years. The year has been a rewarding one, and I wish to express my sincere appreciation to all of you who have worked so hard to make the forward progress of the Federation sure and steady.

One of our speakers this evening is one of the leading woman economists, a person with worldwide recognition as a statistician, a past President of the American Statistical Association. She has been Acting Commissioner of Labor Statistics under several Administrations. Before going to the Department of Labor, she was with the Federal

Reserve System. I feel very partial to our speaker of the evening, since she took her master's degree at the University of Chicago.

Since the movement of the general price level is of great importance in the determination of stock prices, it is most fitting that we have with us this evening one of the really great experts in the field of prices. I take pleasure in introducing for the first time on these programs a lady of distinction, Arnyess Joy Wickens, whose subject is "Recent Price Changes."

Our other speaker this evening is one of our most distinguished and best-known Army officers. Before graduating from West Point, he attended the University of Washington and MIT.

In September 1942, he became absolute czar of the atomic bomb program. From that time on to the end of the war in Japan, he had everything to do with atomic energy. He was involved in every phase of this program, production, operation, the bomb, intelligence, counterintelligence, diplomatic problems, and the political repercussions, immediately after the bomb was exploded, in protecting the best interests of the United States.

Since he retired from the Army in 1948, he has been vice-president and director of Remington Rand. It is my pleasure to introduce Lieutenant General Leslie R. Groves, who will talk to you on "Recent Developments in Atomic Energy."



...growing with the great southwest...

A 67% GAIN IN NET EARNINGS in the last five years marks the Southern Union Gas Company as one of the fastest growing natural gas utility companies in the country. A corresponding rise in company assets, from \$45,107,502 in 1949 to \$83,993,438 in 1954, indicates the sound basis on which the 25-year old company continues to develop.

STEADY INCREASE IN DIVIDENDS for common stockholders reflects the company's mounting earnings and strong financial position. Early in 1955 the Board of Directors voted to increase common stock dividends to an annual rate of \$1.00 per share from the previous rate of 90c paid in 1954 . . . showing a consistently rising increase from the 77½c per share paid five years ago.

STRONG GAINS IN CUSTOMERS have been achieved. In keeping pace with the rapidly growing Southwest, Southern Union has extended distribution lines to furnish natural gas to 62 cities and communities in Texas, New Mexico, Arizona

and Colorado. The company now services over 265,000 customers compared to 41 cities and 171,000 customers served in 1949.

SUCCESSFUL EXPLORATION and DEVELOPMENT of natural gas and oil resources on company holdings protects future growth by assuring a dependable supply of natural gas.

ADDITIONAL REVENUES are also realized by this phase of company operations through the sale of crude oil and the by-products of natural gas. Southern Union's large gas and oil lease properties, which are constantly being added to, are located in the world-renowned oil and gas producing sections of the Southwest.

UNUSUAL GROWTH ASPECTS of Southern Union are due to several factors. The company is young and vigorous, ideally situated in the industrially developing Southwest. The migration of big business to this industrial frontier, with the corresponding upswing in population, means a steady increase in commercial and residential customers for natural gas. These factors, plus the expanding use of natural gas as a fuel throughout the country, indicates a continued advance in Southern Union's business during the years to come.

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Secretary-Treasurer, Southern Union Gas Company
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Southern Union Gas
Company
HELPING BUILD THE GREAT SOUTHWEST

Recent Price Changes

ARYNESS JOY WICKENS*

A DISCUSSION OF COMMODITY PRICES at the close of a two-day session of security analysts could scarcely be anything but an anticlimax. It will have to be done in a soft voice, with little accent, and in a minor key. It is a bit like programming for a symphony orchestra and following Ravel's *Bolero* with its rising tempo, its crescendos, and its furious climax, with an old-fashioned string quartet with harpsichord accompaniment.

For *your* market now occupies the front page and the center of attention. Stories of commodity markets are usually tucked away in an inconspicuous column.

After all, news in the United States is made by something which moves faster, is bigger, more erratic, more exciting, and, preferably, makes new highs every day. There is no news in a story that begins: "Price index shows little change."

For a round dozen years from Hitler's invasion of Poland in 1939, the commodity price indexes were our measure of inflation—of the varying buying power of the consumer's dollar and the producer's dollar; of the ebb and flow of the economy, as wartime demands and a vast outpouring of Government-generated credit raised prices. But, since 1952, these price barometers have been quite stable. The wholesale price index of the Bureau of Labor Statistics has moved within a range of 109 to 112% of its 1947–49 average for the past three years, and the consumer price index has moved within the range of 113 to 115½% of the 1947–49 average.

STABILITY OF PRICE INDEXES

It is, of course, true that the stability of price indexes in itself is news of a sort. Newspaper readers apparently like any kind of new record. And when, in March 1955, the consumer price index remained unchanged for the fourth successive month—for the first time on record—this was good for a story.

There is of course, significance in this really quite remarkable general stability of the price level. It is easier for businessmen to plan ahead; there is less need to build up or hastily to liquidate inventories of materials and supplies; there is less chance for either windfall profits or speculative losses; the escalator clauses don't escalate.

For all of us, as consumers, it means that our household budgets can be planned with more certainty; that our dollars command on the whole, the same, or a little better, living, given the same income. The spiral of higher consumer prices, higher wages, higher costs, higher prices no longer needs to operate so generally.

Some areas, of course, like the services and rents, are still "catching up." But for those of us who have lived through the price gyrations of two World Wars and the Korean episode and through the great depression, this price stability is, quite simply, a relief.

For commodity prices are, in many ways, a mirror of that part of our economic life that revolves around goods—in business and at home. This over-all price stability at high price levels is a reflection of adequate supplies of goods now available in most markets, combined with a sustained high level of buying by both consumers and producers during the postwar period, with only minor interruptions. We reached these inflated postwar levels because of wartime and postwar fiscal and monetary policies and genuine shortages of goods. In the past three years, credit and monetary policies have played a major part in keeping the value of the dollar, in general, on a fairly even keel.

But when the broad indicators of commodity price levels are stable, as they have been for the last three years, what does it imply for the state of the economy as a whole? Some of us can recall that, for quite a period in the '20's, the commodity price indexes also did not vary widely.

PRICES HAVE FALLEN PRECIPITATELY

To be sure, wholesale prices had fallen precipitately—by nearly 45%—from their exceptional highs in 1920 to a low in the summer of 1921. But for the remainder of that decade the wholesale price index varied from 90 to 105% of its 1926 average.

I hasten to add that I do not wish to draw a close parallel between that decade and the '50's but merely to call to mind one thread of comment current then which is still vivid in my memory and which has a bearing today. It was to the general effect that "Prices are stable. There is no inflation; if there were, it would be evident in the commodity markets."

Did we in the mid-'20's overlook certain signals of economic difficulties then evident in the commodity price indexes? No, I think there were no obvious signs in the price indexes of that day.

That careful scholar, Dr. Frederick Mills of the National Bureau of Economic Research, analyzed commodity prices with meticulous care in 1927† and concluded that, since the variability of prices had diminished and the several segments of the economy were fairly well adjusted pricewise, the outlook was for continued price stability. (I should say, in fairness, that he also pointed out that certain other values were out of line and that certain forms of income were outrunning others.)

MOVES CONCURRENTLY WITH BUSINESS CYCLE

In its research since that time, the National Bureau of Economic Research has come to the conclusion that the wholesale price index does not forecast, but moves *concurrently* with the business cycle, and that the severity of a turn in general activity can be gaged by the pervasiveness

†F. C. Mills, "Postwar Prices and Prewar Trends," *Proceedings American Statistical Association*, March 1928, volume XXIII, supplement, page 45.

*Acting Commissioner of Labor Statistics.

of the rise or the decline in prices—that is, by how general it is. They have made some valuable new indexes of diffusion to measure this phenomenon.

The one price index that is a sensitive forecaster of turns in business, according to the National Bureau of Economic Research, is the Bureau of Labor Statistics' *daily* index of 22 commodities traded on the organized exchanges on a spot basis. Of course, this index is affected by special supply situations, which are always arising in international markets; for example, for tin or cocoa or wool.

If, however, there is a concerted move by the commodities in this index, the index appears to have had predictive value for economic activity as a whole. Thus the rise in basic commodity prices before Korea and the rapid advance immediately thereafter were cases in point. And so, I say, if you follow commodity prices as a barometer, keep your eye on this daily index.

Now to return to the present: At what price levels have we stabilized, and are prices fairly well in balance today? Where are prices after a Second World War and Korea? A decade has gone by since V-E Day, and this is a good time to look beneath the surface to see what underlies this price stability.

HIGH RELATED TO PREWAR LEVELS

First, the price level is, of course, very high in relation to prewar levels. The wartime wave of increases carried wholesale prices up 40%. Postwar inflation, fed by ample savings and easy credit in the face of widespread shortages of goods, raised this index to more than double its prewar level by 1948.

The economic readjustment of 1948-49 brought a small decline from that peak. The speculative wave that followed Korea again forced prices higher in 1951.

However, the realization that Korea was not another World War sobered the commodity markets quite quickly, so that inventories were gradually liquidated and prices fell. By the end of 1952, the BLS daily index of basic commodities was back to pre-Korean levels, and the broad-scale wholesale price index had come down by about 5% from its Korean peak to a level about 120% above prewar. Then began the present period of price stability.

In comparison with the 1939 pattern, prices of the products of the raw-materials-producing industries—agriculture, forestry, and mining—are still running ahead of the average. Whereas prices of crude materials are approximately 150% higher than they were in 1939, finished goods are up by 100%. (The Bureau of Labor Statistics will soon publish some new analytical measures descriptive of these varying trends.)

On the agricultural side, prices of farm products, despite their decline since 1951, are 160% above their very low prewar level, and processed foods are up by 140%. In the industrial segment of the economy, prices average less than 100% above 1939 levels.

In reaching these current levels, there have been sharply divergent price movements. Since 1951, farm prices have declined consistently, while the prices of industrial commodities as a group, after a small decline, have advanced steadily and are almost back to their 1951 peaks.

Within these groups, again, there are widely differing trends. The post-1951 decrease in farm prices is mainly the result of sharp drops in products like steers and poultry and hogs.

Other products, like the grains, have been fairly stable at high levels. In industry, on the other hand, we find such anomalies as electricity for industrial use being cheaper than in 1939, while paperboard is almost triple its 1939 level.

I do not mean to imply that there is any magic in the price relationships of a particular period, be it 1939 or any postwar year. It would be a mistake so to regard them. When prices are far out of line with each other, and with costs, further changes are certainly to be expected.

Generally speaking, a good many of these readjustments have by now been accomplished. However, some of the relationships of earlier periods have actually changed, and we may be misled if we draw conclusions from them. So let us look at them for a moment.

First, there are structural changes in the markets, which to me means that an increasing amount of price stability has been built into the economy—by Government action and by rising fixed costs of various kinds. Some prices cannot decline except very slowly without involving severe financial losses.

In this setting, some problems are inevitable. There are maladjustments: as between the costs of price-supported feed grains and current low prices of cattle, for example; as between rates for services, such as bus and trolley fares and other regulated utilities, and the rise in the prices of materials, supplies, and labor which they use. In such a situation certain prices move against the trend, as is true of rents and services in the consumer price index.

In your work as financial analysts, this means that, in analyzing the potential of a finished-goods manufacturer, for example, as you are constantly doing, your familiar assumptions regarding price changes in his products must be very different from what they were before the war. So take another look at them. A sharp decrease in the price of a raw material is not likely to be reflected in the same degree as before in the prices of finished products, at either the manufacturer's or the retail level.

SOME RECENT ILLUSTRATIONS

Consider some recent illustrations: Prices of hides are now about 40% of what they were in 1951, while manufacturers' prices of leather shoes are down only about 10%, and retail prices are essentially unchanged. Similar situations exist in textiles—as for example, in the greater decline in prices of cotton fabrics than in men's shirts or women's house dresses—and in foodstuffs such as meats and bread.

Especially since 1951, the spread between raw materials and final prices to the consumer has widened appreciably. This does not imply any blame on the oft-maligned "middle man." Higher dollar tags are found all along the line—not only for materials but also for new capital equipment, for fuel, for transportation, for supplies, for wage rates, and for the services involved in distribution.

Of course, there are exceptions. The spread between manufacturers' and dealers' prices of a good many house-

hold appliances has narrowed appreciably since 1952, and manufacturers' prices have stayed fairly steady, despite higher prices for certain materials and component parts, higher wage rates, and other costs.

There is another factor contributing to price stability: Productivity gains of recent years have often shown up in improved or elaborated products or in better service, as well as in higher wages—not in lower quoted prices. There is now more processing, even in standard items.

In the old days we were happy to get plain white flour; today we get a cake mix of enriched and irradiated flour with shortening and leavening compounds already mixed in. Before the war, when we bought a house, the lights often had pull-chain sockets; now we can have a fancy master-control panel so that without getting out of bed we can not only turn on all the lights, but also get the breakfast coffee started.

Take something as simple as fresh vegetables: Carrots now come in a plastic bag with the tops removed, ready for rinsing and eating; and meats are precut, prepacked, and even precooked. These innovations may give greater satisfaction, and certainly they relieve the lady of the house of a lot of work, but the carrot is still a carrot, and now it comes higher!

Or take tires: On a mileage basis, the new 1955 tubeless tires are probably less expensive in real dollars than were the 1939 model tires. Still the addition of these improvements usually means larger dollar price tags. Once set, they do not change quickly. But all this is not new—it has been going on in various forms for decades.

Currently the trend toward improved quality is apparently accelerated. Its significance for us is this: With a growing share of the economy devoted to finished goods, we may expect greater stability in price indexes, especially at the retail level for consumer goods.

ESCALATOR CLAUSES

On the industrial side, one complication in analyzing prices in relation to profits is the spreading use of escalator clauses in industrial contracts which run over a fairly long period of time. They provide producers a hedge against broad changes in the price level.

The wholesale price index is now used in a large number of contracts of a long-term character, some between Government and industry, and others between private firms. They have received less public attention, but I think it is fair to say that more billions of dollars of business are affected by these contracts than by the consumer price index type of wage contract.

For example, the cost to the Government of the Carrier Forrestal carried provisions for escalation. These price escalator clauses are also used in long-term leases; in maintenance contracts, such as elevator maintenance; and in contracts for the purchase of natural resources.

There are literally thousands of such contracts and currently they are increasing. What does this imply for the

economy? What does it mean for quoted prices? Can we all hedge against changing values?

Most pervasive, and most important to the stability of the general price level, is something less tangible than these institutional changes, and even than the balance of supply and demand in many markets. We have had a decade since V-E Day in which to capitalize high dollar incomes and high prices into fixed obligations of many kinds.

There are big dollar tags all around us, on the cost of new plant and equipment, and on the securities with which they were financed. There are higher values on homes—old and new—and higher mortgages. There are, I scarcely need add, higher security prices.

Once this releveling of values is accomplished and the economy is adjusted to it, the importance of sustaining and stabilizing a generally high level of activity and of values — not merely commodity prices — becomes very great — economically, politically, socially. Here monetary and fiscal policy can be crucial in determining the general climate, but there are certain other phases of the economy, going beyond the markets for goods, which come to the center of the stage. They are the values on property and on equities of all kinds.

Without pressing the analogy too far, take another look back at the 1920's. Think, then, of the spread of speculative activity—like the frantic Florida land boom of that decade, for example; the overbuilding of commercial buildings and of some of the industrial financing of that era; the pile-up of holding companies on holding companies, and the creation of fanciful financial structures.

Today, in appraising the economy, we have no truly general index of the price level, including these very crucial values. We still view the price picture piecemeal.

I do not mean to draw a close parallel with the 1920's because many economic factors are very different today: Among these are the financial structure with its greater flexibility, on the one hand, and wide Government guarantees of deposits and mortgages on the other; the so-called "built-in stabilizers;" the fact that incomes of more American families now cluster closer around the average than in the '20's, with the very great war and postwar rise in wages and salaries and in farm income, and therefore more broadly based buying power; the greater awareness by the public and the Government of economic problems and how to deal with them.

I mean merely to illustrate this point: Stability of price indexes is not, in itself, either a forecast of things to come in such a period as this, nor are these indexes the best gauge of the state of the economy. This is a good time to look beneath the surface of the price indexes and to analyze each industrial and agricultural situation in terms not only of prices but of costs and of market potentials as well.

Then, may I suggest, when you take your eyes off the ticker, look around at other kinds of dollar tags, at other values. Look at the trading in other markets — markets that are *not* on the front page, as is *your* market.

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The speech presented by General Leslie R. Groves will appear in a future issue of THE ANALYSTS JOURNAL.

National Federation Field Trips

JOHN BOHMFALK*

TRIP

1

Brookhaven

National Laboratory

A GROUP OF 55 ANALYSTS made the trek to Brookhaven National Laboratory out near the eastern end of Long Island. The trip was stimulating, to say the least. After running the gauntlet of guards and militia men who impounded cameras at the gate, the analysts were briefed by Dr. R. A. Patterson, assistant director on the functions and operations at Brookhaven.

VARIETY OF RESEARCH PURPOSES

After lunch with some of the laboratory personnel, the group was conducted on a tour of some of the more interesting features at Brookhaven. First stop was the west face of the reactor, a model-T pile, so to speak, which is used for a variety of research purposes.

The graphite-moderated air-cooled reactor generates 25 megawatts, and laboratory personnel are shielded by thick concrete. Rods of natural uranium metal are placed in a graphite cube approximately 25 feet on each side. Uranium 235 atoms, when struck by neutrons, fission into smaller atoms plus neutrons which repeat the process to induce a self-sustaining chain reaction. Control rods consist of 2% boron steel.

Standing next to the west face, the analysts could hear series of staccato clicks as beams of neutrons and gamma rays were directed at materials exposed. Probably a substantial part of the experimental work consists in the preparation of radioisotopes which are delivered to hospitals and industries utilizing such materials. A classified area to which the analysts were not exposed was devoted to work on Brookhaven's liquid-metal-fueled reactor, still in the experimental stage.

A medical department which will probably be expanded in the near future has among its projects the study of ra-

dioactive iodine for cancer of the thyroid, neutron capture therapy (boron 10 in borax) for brain tumors, and the combination of radioactive elements with a sodium-free diet in the study of hypertension. The present Brookhaven hospital takes very few patients.

Along with radioisotopes, Brookhaven makes use of radioactive materials or wastes in investigation of food sterilization, polymerization initiation, plant and agricultural mutations, and radiation damage to mice in the form of toxins or tumors. In the agricultural project for example, plants are subjected to various types of irradiation to secure desirable mutants (most mutants discovered are undesirable), which provide a better yield or perhaps a shorter growing season and are more disease-resistant.

The hot chemistry laboratory which permits remote-controlled processing of radioactive chemicals was the next stop. Unfortunately, the "swimming pool" was in operation and inaccessible; it provides storage for "hot" materials which are submerged in the tank, utilizing water as the shielding material.

THE COSMOTRON

The cosmotron was somewhat difficult to fathom as it was enclosed and used for very advanced research purposes. This monster of a machine, 75 feet in diameter, accelerates protons in a circular path to an energy state of the order of 2.3 billion electron volts. At the desired energy level, protons strike target atoms which are exploded into different particles as neutrons, mesons, and gamma rays. The process is recorded on photographic film or a cloud chamber, either of which leaves tracks indicating the pattern of nucleus explosion.

After ushering in the atomic age, the analysts were cruelly exposed on the way home to the frailties of the mechanical age when the bus broke down.

*Clark, Dodge & Company.

TRIP

2

Federal

Paper Board

A COMPLETE TOUR of Federal Paper Board's modern integrated paperboard and folding-carton plant at Bogota, New Jersey, was given May 11, to approximately fifty analysts attending the Eighth Annual Convention of the National Federation of Financial Analysts Societies. After a bus trip en route through the streets of New York, over the George Washington Bridge and the hills of North Jersey the analysts were greeted by the company's president, Mr. John R. Kennedy.

DIVIDED INTO SMALL GROUPS

We were then divided into small groups, each with a well-informed company guide, and were first shown how the waste paper, mostly old newspapers, was reduced to a fibrous state. It was then explained and shown how this pulp was converted into board and the board, in turn, into

cartons. It was emphasized that all the cartons made by Federal were to customers' specifications.

EXPANSION PROGRAM

After the tour we were taken to the Knickerbocker Golf Club for a luncheon conference with company executives. After lunch, Mr. Kennedy spoke briefly about the company's expansion program and discussed current operations at its 13 paperboard mills and carton plants. He reviewed the promising outlook for the industry and indicated that Federal would share in that future. Most of the session was devoted to questions and answers, and we were impressed by Mr. Kennedy's informative and forthright replies to our many questions.

This was a most enjoyable and enlightening field trip. The analysts learned a lot about the making of paperboard and cartons, the economics of the industry, and Federal's operations.

*Goldman, Sachs & Company.



Directly below: Analysts being briefed by John R. Kennedy, company president (photo by Homer Vilas Jr.); bottom below: analysts inspecting wastepaper bales; left: analysts lunch with company executives.



TRIP

5

*General Precision**Equipment*

THE GENERAL PRECISION CORPORATION trip proved to be one of the most sought after, instructive, and (judging by after remarks) one of the most enjoyed of those scheduled at the May meeting of the National Federation of Financial Analysts Societies in New York. Limited to 50 persons, these individuals were given a first-hand look into the world of precision mechanics, controls, components, and systems, which is already playing a key part in advanced military technology and promises much for future industrial progress. In the afternoon the visiting analysts were given an equally intriguing glimpse into the advancing arts of color and industrial television.

The trip itself started from the Hotel Commodore about 9:15 A. M. and ended back in New York about 8 P. M. The first stop was at the new Little Falls, New Jersey, plant of Kearfott Company, one of the corporation's 21 active domestic subsidiaries.

Here top management, in the persons of R. T. Rinear and F. D. Herbert Jr., briefed the group on the overall activities of the corporation and of Kearfott Company, and the sales manager described, within the limits of security, some of the uses for the instruments and components on display. This was followed by tours through the plant in groups of seven or eight, with each group

headed by a member of the plant management team. Later management provided cocktails and luncheon at a local country club, after which the buses headed for Pleasantville, New York.

At Pleasantville, the analysts were again given excellent briefing help from senior officers, including Dr. Raymond L. Garman and Mr. James W. Murray of General Precision Laboratory Incorporated. The part played by the latter and its subsidiary, Pleasantville Instrument Corporation, in the over-all picture was outlined, and management was most helpful in answering questions on the facilities under observation.

These facilities included advanced color-television broadcasting equipment and industrial television units. It was generally agreed that industrial television would find increasingly broad application in industry. The group was also taken through the engineering building at Pleasantville where materials and designed equipment are put through various tests, including shock treatment, simulation of subzero and high temperatures, and tropical conditions.

In short, the trip was a huge success, and all the analysts were most appreciative of the time and courtesies extended by the General Precision Equipment Corporation. For those New York analysts who graciously stepped aside in favor of the out-of-town guests, it may prove possible to have another limited trip arranged later in the year.

*First Boston Corporation.

Analysts inspected company operations and precision control instruments at the Kearfott Company



TRIP

6

*Bell Telephone**Laboratories*

SHORTLY BEFORE 8:30 A.M. on May 10, 1955, Mr. George Armstrong, assistant treasurer of the American Telephone & Telegraph Company, and representatives from the Bell Telephone Laboratories and two buses arrived at the entrance of the Commodore Hotel to take a group of security analysts on a trip to the renowned Bell Telephone Laboratories. It was a pleasant day and the ride over to Summit, New Jersey, was short and enjoyable.

The laboratories are housed in modern buildings located in a beautifully landscaped setting. Upon arrival, we were conducted into an acoustically corrected auditorium where a person speaking in a natural voice could be heard in any place in the hall.

In a demonstration of its acoustic qualities, a speaker turned his back to the audience, but his voice was easily and clearly heard. This auditorium was used by Dr. Ralph Bown, vice-president in charge of research, in a brief discussion of the functions and position of the Bell Telephone Laboratories in the Bell Telephone System.

Bell Telephone Laboratories is a research and development organization that creates fundamental knowledge and new devices, and develops apparatus and systems that improve telephone service. The stock of Bell Laboratories is owned jointly in equal proportions by the American Telephone & Telegraph Company and the Western Electric Company.

Its budget for research and fundamental development this year is about \$27 million, and the budget covering the cost of developing and designing new equipment and modifying existing equipment is approximately \$35 million. The costs of the former are allocated to the American Telephone & Telegraph Company and the latter to Western Electric Company.

The construction and development of a new telephone cable to be laid under the Atlantic Ocean from the United States to Great Britain was explained to us. This new cable is designed to give continuous service for a period of approximately twenty years without maintenance or repairs.

Its almost foolproof design includes highly developed amplifiers, that are built right into the cable in such a way that they can be wound around cable reels and laid by the cable ship on the seafloor, as a continuous operation without any splicing. These amplifiers automatically boost the signal going through the cable, an effect that may be lik-

ened to the increasing of the volume of a radio by turning the control upward.

We were also told about the development of Distant Early Warning (DEW) line of radar air defense that is being built across the northern edge of the continent. It will detect enemy aircraft and flash a warning to defense command centers in the United States and Canada seconds after the aircraft comes into range.

The laboratories also developed the electronic equipment for the guided missile "Nike." This missile is designed to locate and destroy hostile aircraft which by height, speed, or evasive tactics might escape conventional weapons.

We were then conducted through the laboratories' silent room, which is used for the precise measurement of sound. This is an oddly constructed cubical room which has a grid of high-tensile-strength wires stretched across its center which served as a floor. In entering the room, one has the feeling of being suspended in space inside a cube, and, because of the lack of sound, the room is known at the laboratories as the "dead room."

We toured other sections of the laboratories, where we were told about carrier systems and shown examples of equipment which make their operations possible. The carrier systems permit a number of conversations to be transmitted simultaneously over the same pair of wires. With the latest type of carrier equipment, a pair of copper tubes in a coaxial cable can handle as many as 1,860 telephone conversations at one time in two directions.

Samples of the now widely known transistor which was developed by the Bell Telephone Laboratories were shown to us. The transistor is a tiny yet simple electronic device that performs many of the functions of vacuum tubes.

It uses minute amounts of electric power and generates almost no heat. In the telephone system, one of its uses is in switching equipment which routes long-distance calls automatically.

One of the newer types of transistors has parts so small that they cannot be manufactured by hand; in fact, the Bell Laboratories Company has only one man who with the use of a microscope can assemble the unit. This particular transistor, known as a junction transistor, contains a very thin piece of germanium which is about 1/16 of an inch long.

In its center is a microscopically small portion that is positive. Hence, the name NPN, which means that the germanium is composed of a negative section, a positive section, and another negative section.

*Goldman, Sachs & Company.

TRIP

7

Merck & Company

A GROUP OF SIXTY participated in the Field trip to Merck & Company, Rahway, New Jersey, on May 11. The morning was devoted to a tour of some of the research and production facilities, including the Institute for Therapeutic Research, the research laboratories and extensive pilot plant, and the sterile techniques building.

At the institute, efforts are directed primarily toward determining the safety and efficacy of products before clinical testing begins. These preliminary investigations are made, for the most part, on animals—mice, cats, dogs, monkeys, and light farm animals. In the sterile techniques building, the group viewed the packaging of antibiotics and other similar materials under conditions of almost complete sterility.

After the luncheon, James J. Kerrigan, president, reviewed recent developments and introduced Dr. Max Tishler, vice-president in charge of chemical research for the chemical division, who discussed Merck's research activities, particularly in the steroid field and with the various vitamins. Merck scientists, assisted in some instances by

*White, Weld & Company.

(Concluded from preceding page)

To the central or negative section of the germanium, it is necessary to attach the flattened end of two gold conducting wires. The ends of these wires cannot be seen by the naked eye, and the wires are so small that they require support by being placed inside nickel tubes. An engineer explained the operation of "Mr. Meticulous," the amazing machine developed by the laboratories, which has the ability to locate the negative section of the germanium and to weld the gold wires to it.

We then saw a solar battery, a recent development of the laboratories, which is the first successful device to convert substantial amounts of the sun's energy directly and efficiently into electric current. It is strictly an energy-conversion process that involves no moving parts or consumption of materials.

In the telephone system, it is expected that these batteries will find use in rural service, where they will supply the energy required for telephone service in the less densely populated areas. In operation, the solar battery would convert the sun's energy into electric energy, which in turn would be stored in a battery for continuous use in telephone service.

We left the laboratories at Summit for a visit to the West Street laboratory in New York City. At this laboratory, the new switching systems were explained to us.

The function of these systems is to make possible the

research teams outside the company, have produced vitamin B₁, pantothenic acid, and biotin, and have been the first to isolate vitamins B₆ and B₁₂.

Most recently reported by Merck research team is a new antibiotic, Camycin, which shows promise against such diseases as tuberculosis and enteritis, and also in infections of the skin and genitourinary tract. Merck took this occasion to announce that the company would market the hormone, prednisone (initially introduced as metacortandracin), under the name Deltra, as soon as clearance is obtained from the Food and Drug Administration.

The session concluded with a lengthy question-and-answer period, during which Mr. Kerrigan called on a number of management people to provide the answers to questions that were raised. Complying with a request for a comment on the sales breakdown, Mr. Kerrigan remarked that vitamins, hormones, and antibiotics—in that order—accounted for the greater part of sales. In concluding the session, Mr. Kerrigan stated that further developments within Merck could be followed by contacting Mr. Raymond Snyder, financial vice-president, or Mr. John Gage, treasurer.

direct dialing of any one of millions of telephone numbers, both local and long distance. By the use of a simple dial and a three-figure area code, it is now possible in some communities for subscribers to dial to others across the country, from Jersey to California, in just a few seconds. The heart of the new system is the "card translator" which, with the aid of phototransistors, provides quick and automatic selection of call routes.

Closely related to the automatic-switching and direct-dialing systems are other large electronic machines for automatic accounting. One of these machines was demonstrated to us.

These amazing machines record the details from many calls on perforated tapes, compute and assemble the information on other tapes, and punch it onto cards. These cards are run through machines that render the customer's bill with complete information pertaining to the call.

For those who had the good fortune to be included on the trip, I wish to express to the American Telephone & Telegraph Company, to Mr. John J. Scanlon, treasurer, and to Mr. George Armstrong, assistant treasurer, who made the arrangements for the trip, and to their associates in the laboratories, our appreciation for a most successful day. I feel that it is the unanimous opinion of the analysts who were on the trip that investors in American Telephone & Telegraph may continue to expect wonderful developments to come out of the Bell Telephone Laboratories.

TRIP

8

R. H. Macy

R. H. MACY & COMPANY—the New York City unit is the world's largest department store—played host to some 50 security analysts plus a number of wives (a total of about 65 persons) on Wednesday, May 11.

CHAIN OPERATION

After the delegation was ushered into several different executive offices on one of the upper floors, where coffee and refreshments were served, the party convened to another assembly place where official greetings were extended by Mr. Jack Straus, president. After Mr. Wheelock Bingham, president of the Macy New York store, had briefed us on various high lights of the Macy chain operation, the party was split up into seven groups for a tour of inspection.

PROTECTION AGAINST BURGLARY

Of particular interest was the demonstration put on by those charged with safeguarding the store to protect against burglary after business hours. This demonstration involved a number of highly trained German police dogs (Doberman Pinschers) that are trained not only to give the alarm (by barking) when smoke or fire is detected, but also to flush out and hold at bay indefinitely any unauthorized persons lurking on the premises. These animals are also

trained to patrol the vast floor acreage that makes up the giant Macy store in New York City.

BUREAU OF STANDARDS

Another interesting feature was the unique Macy Bureau of Standards department, where a wide assortment of merchandise is subjected to all sorts of tests before orders are finally given to the suppliers. Clothing, for example, was seen tested for vulnerability to heat or fire, wearing qualities, wrinkle resistance, and so on. Furniture was seen subjected to rough usage to test springs, durability, and the like.

BEHIND-THE-SCENES OPERATIONS

Other behind-the-scenes operations viewed included the receiving of merchandise, the telephone order room, the Macy Bank that operates the "cash-time accounts," as well as certain of the more interesting sales departments, china, furniture, sporting goods, books, and so on. Each touring party was in charge of a Macy official who was made available to act as a guide and to answer any questions that arose.

KEY OFFICIALS PRESENT

At the conclusion of the tour the party convened for an excellent buffet luncheon in the executive quarters. About 30 key officials of the Macy organization were also present at the luncheon affair and scattered among our group.

BRANCHES

Finally, the group again convened in the assembly room where the three top officers, Mr. Straus; Mr. Chinlund, vice-president and treasurer; and Mr. Bingham made extended talks on all phases of the entire Macy enterprise, including the other main stores and branches throughout the United States. In this connection, the management supplied each guest with an extremely valuable and detailed brochure on the Macy enterprise, prepared especially for the analysts for this occasion. A question-and-answer period followed the talks by these three ranking officials.

The attending analysts seemed to consider the trip quite enjoyable and very worth while. The Macy officials, who incidentally put a great deal of time and effort in preparation for this affair, also appeared quite pleased with the outcome, and certainly merit our heartfelt thanks.



Analysts and Macy officials confer during field trip to world's largest store

*R. L. Day & Company.

TRIP
9*Socony Mobil Oil**Paulsboro Refinery*

THE FACILITIES of Socony Mobil Oil Company were made available to the National Federation of Financial Analysts Societies New York Convention for a day's visit to the research and development laboratories and refinery at Paulsboro, New Jersey, near Philadelphia. Paulsboro is the largest eastern unit of Socony. A group of 75 analysts, primarily oil specialists, was treated to a day's visit with Socony on a most enlightening excursion.

Socony provided special train facilities for the 150-mile expedition. Particularly gratifying was the fact that some 24 Socony executives accompanied the analysts, affording ample opportunity during the two-hour train ride to get acquainted, and to ask and answer questions about the oil industry and about Socony's operations on a worldwide basis. Socony executives on the trip included financial officers, the director and executive in charge of producing, the vice-president in charge of finance, research and engineering executives.

90,000 BARRELS A DAY

After a tour of the 90,000-barrel-a-day refinery at Paulsboro, with a general view of catalytic-cracking facilities and other processing and handling facilities, the group, after luncheon in the company cafeteria, was divided into subgroups of about six persons each, for a closer look at the laboratories and testing operations at the plant. It was indicated that the company spends about \$15 million annually on research, something close to 1% of revenues, as a means of maintaining the pace of progress of Socony Mobil products.

THE LABORATORIES

In twenty-three years, the laboratories staff has expanded from 250 people to over 1,400 men and women, and the budget from \$1 million annually to over \$15 million. The laboratory at Paulsboro involves more than 800 people, making up one of the largest laboratory staffs in the world devoted to study of the utilization of crude petroleum.

The tour through the technical facilities was expedited greatly by the division into small groups, co-ordinated in such a way that no two groups were in the same section at once. The physics laboratory provided a view of the work on electron microscopy in analyzing the effects of various catalysts in arriving at desired products. Ultra-modern equipment was shown in operation, with suffi-

ciently fine analysis, for example, to show the individual atoms of the materials analyzed. At each section a company expert explained the techniques involved.

The electronic-computer station, an "electronic brain," was shown working out a problem. It can figure the most intricate problems of refinery regulation and yields in a matter of minutes.

PILOT-SCALE MODELS

Among the most helpful exhibits to the analysts were the pilot-scale models of refinery processing units. Catalysts being tested in actual treatment of feedstocks offered an effective means of showing the catalytic-cracking process in action. The process was illustrated graphically also by means of transparent small-scale units, showing the movement of petroleum liquids throughout the refining process, in various stages from initial treatment of crude to fractionation and rerun of cracked feedstocks.

Perhaps most impressive was the thoroughness of the testing and investigation employed in the processes for obtaining quality products. The testing of pre-ignition in high-compression engines by laboratory equipment was an instance in point. The company also showed radioactive studies which it conducts to investigate engine wear and adaptation of lubricating oils to achieve long engine life.

TESTING TECHNIQUES

The analysts were also shown some of the company's testing techniques, as applied to automotive, aviation, and Diesel oils, including testing of Diesel fuels in a railroad Diesel engine by electronic indicators. Petroleum sample tests were shown in the analytical laboratory and in typical petroleum chemistry studies.

Comment among the analysts on the trip was most enthusiastic. A much better understanding of Socony's operations, as well as of the petroleum-processing industry as a whole, by implication, was provided.

Conversations with Socony people brought out the general impression that another very satisfactory year appears in store for the company, as a representative oil unit, from the standpoint of operations. Industry demand lagged in 1954, but indications are that consumption of petroleum products will be at a somewhat better rate this year, probably registering a year-to-year growth more in line with the historic pattern of the industry. The rise in petroleum consumption outside the United States, of course, from a somewhat lower base, should be sharper than domestic growth.

*Standard & Poor's Corporation.

TRIP
10*American Cyanamid**Lederle Laboratories*

ABOUT 9:15 A.M., Wednesday, May 11, two buses of financial analysts started out from the Commodore Hotel, traveling through the Lincoln Tunnel and up the west side of the Hudson River to the Lederle division's plant at Pearl River. On arrival around 10:30 A.M., we were greeted at the general administration building by Mr. Lewis C. Perkinson, vice-president of American Cyanamid Company, who welcomed the group and briefly outlined the program for the day.

The analysts were then divided into small groups for a tour through many of the Lederle operations. In addition to the regular girl guides, two Cyanamid officials accompanied each group.

These included Mr. Benjamin, assistant general manager, Lederle division; Dr. Carey, director of laboratory-research division, Pearl River; Dr. Cox, director of virus and rickettsial research, Pearl River; Mr. Duncan, general manager, Lederle division; Dr. Fontaine, production manager, Pearl River; Dr. Jukes, director of nutrition and physiology research; Dr. Parker, director of research, research division, Pearl River; Mr. Walker, treasurer of American Cyanamid; Dr. Williams, director of medicinal chemical research, Pearl River; and Dr. Malcolm and Mr. Perkinson, vice-presidents of American Cyanamid.

RECENT EXPANSION

Some groups started out with a ride in the Trailmobile, traveling around several of the main roads of the Pearl

River facilities, during which trip the guides pointed out the principal operations, the recent expansion as well as some of the older buildings, including the original laboratory of Dr. Lederle. Other groups reversed the procedure and left the general administration building to visit the pharmaceutical production and packaging operations where the various Lederle tablets, capsules, liquids, and ointments are manufactured.

APOTHECARY SHOP

From there, a visit was made to the apothecary shop, which gave a contrast between the modern pharmacy and its counterpart of many years ago. After this visit, the groups went to the biological testing laboratory, wherein biologicals are tested for safety and sterility. One of the most interesting aspects of the tour was through part of mycology research, during which one of the directors of this effort explained, at a round-table discussion, the principles of the search for new antibiotics.

AUREOMYCIN

Comment was also made at this time regarding some of the industrial uses which have been recently established for aureomycin. From there, the group proceeded to the pharmacology research buildings, which revealed some of the methods used in testing the potentials of new drugs.

Subsequently, the groups visited the parasitology research, which showed, and comments were made on, the typical methods for looking for new drugs to combat parasitic diseases. From there, visits were made to the nutri-

*Laird & Company.



Analysts and their wives visit the Pearl River plant of Lederle Laboratories.

tion and physiology research building, which showed some of the high lights in research and development in the field of animal and poultry nutrition.

During the trip, there were several opportunities to pause and have either the guide or the personnel in charge of the particular operation discuss various interesting facets. The Cyanamid personnel, accompanying the groups, were particularly helpful. As a result, there was a happy balance between things to see and things to hear, which was beneficial to the analyst.

After lunch, a motion picture film entitled "The Smallest Foe," describing the activities of Lederle virus research, was scheduled. However, since some of the group tours were running somewhat behind schedule, it was decided to forego this showing in order to give Mr. Perkinson the opportunity to address all of the analysts in the main auditorium.

His comments were in the form of answers to the questions that had been most popular with analysts visiting him in the recent past, after which the meeting was opened to questions from the floor. Some of the high lights in this auditorium period with Mr. Perkinson may be briefly summarized as follows:

AMERICAN SYNTHETIC RUBBER

American Synthetic Rubber Company is now a going concern, in which American Cyanamid has a one-third interested represented by a \$2 million investment.

TITANIUM DIOXIDE PLANT

The titanium dioxide plant at Savannah is due to start at the end of this summer with a capacity of 27,000 to

30,000 tons—the present facilities at Gloucester City, New Jersey, to be transferred to the New Jersey Zinc Company subsequently.

Research on a live-virus polio vaccine is continuing, but Lederle is not now manufacturing any polio vaccine for commercial use.

CAPITAL EXPENDITURES

Capital expenditures in 1955 are not likely to exceed \$30 million, compared with \$40 million in 1954, with the principal expenditures (costing in the neighborhood of \$10 million) surrounding thermoplastic facilities at Wallingford, Connecticut, and Fortier, Louisiana. These facilities are primarily for methyl styrene (interesting from the standpoint of heat resistance), where Cyanamid has a strong patent position. Another project is the completion of the titanium dioxide plant at Savannah, Georgia.

It was implied that the Fortier facilities for acrylonitrile could be doubled at a relatively low cost as new uses developed. Notwithstanding the recent revival of acrylic fibers, no decision has yet been reached in this connection.

April sales for the company were about at the same rate as those of the first quarter. Full-year volume can conceivably increase some 5 to 10% over 1954 experience. Generally speaking, this comment implied that earnings should be better than they were last year. Over the past several years, the management has paid out some 50 to 75% of earnings to the common stockholder.

After these comments, the analysts journeyed back to the Commodore Hotel, each with a sample package of Lederle products, to mull over all that they had learned during a most interesting and informative field trip.

Newport News Shipbuilding and Dry Dock Company

Quarterly Statement of Billings, Estimated Unbilled Balance of Major Contracts and Number of Employees

Billings during the period:	Three Fiscal Months Ended	
	March 28, 1955	March 29, 1954
Shipbuilding contracts	\$21,404,115	\$25,940,575
Ship conversions and repairs	2,431,576	7,850,247
Hydraulic turbines and accessories	3,236,124	1,510,048
Other work and operations	3,447,741	2,421,978
Totals	<u>\$30,519,556</u>	<u>\$37,722,848</u>
Estimated balance of major contracts	At March 28, 1955	At March 29, 1954
unbilled at the close of the period	\$155,915,415	\$264,873,284
Number of employees on roll at the		
close of the period	12,979	15,937

The Company reports income from long-term shipbuilding contracts on the percentage-of-completion basis; such income for any period will therefore vary from the billings on the contracts. Contract billings and estimated unbilled balances are subject to possible adjustments resulting from statutory and contractual provisions.

By Order of the Board of Directors
R. I. FLETCHER, Financial Vice President

April 27, 1955

TRIP II

Anheuser-Busch and Western Union

THE TRIP to the Anheuser-Busch brewery in Newark, with a subsequent luncheon as guests of Western Union, followed by inspection of Western Union's research and latest developments, was a satisfying one.

ANHEUSER-BUSCH TOUR

The brewery in Newark is the largest all-new brewery in the United States. Completed in 1951, it has an annual shipping capacity of 1,840,000 barrels. This plant is strategically located on one of the main highways to New York; hence transportation costs are at a minimum for serving the large Newark and metropolitan New York area.

OWN GENERATING CAPACITY

The plant has its own generating capacity and contains all the newest equipment, and there is ample room for fur-

ther expansion. We were impressed by the spic-and-span shape the plant was in and the shininess of the copper brew kettles.

Anheuser-Busch has many distinctive methods and processes of making its premium beer. It is the largest user of imported hops.

FERMENTING TANKS

It has its own patented fermenting tanks. It is one of the few breweries to use the "Krausening" process, which is an expensive second-fermentation method.

We learned also that Anheuser is one of the few breweries to age its beer in wood, using beechwood chips. The bottling, canning, and packaging department is one of the largest of its kind that we have seen, employing all the most modern high-speed packaging machinery.

Following the tour, Mr. McCrum, the treasurer of Anheuser-Busch, discussed the first-quarter report of the company, after we had partaken of the brewery's finished product. He pointed out that, though the first quarter of 1955 showed that net sales declined approximately \$5 million

*Reynolds & Company.

Top left: Analysts gather in front of the Anheuser-Busch Newark Brewery; bottom left and right: analysts are briefed by Western Union management.



from the first quarter of 1954 and per-share earnings were \$0.39 versus \$0.60 per share, this was largely due to the very high rate of sales experienced in the 1954 period.

Actual 1955 operations were more closely normal for this time of year. Mr. McCrum pointed out that industry beer sales were running ahead of last year, and the outlook for the remainder of the year is encouraging.

The company's schedule calls for a sales increase of approximately half a million barrels over 1954. He pointed out that they retain the New Orleans property which was acquired over a year ago, with a view to building a new brewery to serve that area. No plans to construct this brewery are entertained at the present time.

WESTERN UNION TOUR

Returning to New York, we were entertained at lunch at the Arkwright Club by the management, officers, and directors of Western Union. We were addressed by Mr. Walter P. Marshall, president, prior to a conducted tour of the bank-wire system, Facsimile demonstrations, automatic-transmission methods, and the general research laboratories of the company.

MECHANIZED NATION-WIDE SYSTEM

Mr. Marshall in his address pointed out that, since World War II, the company has completely mechanized its nation-wide system, substituting automatic-transmission techniques for manual relaying of telegrams, doubled their peak wartime capacity, and made Facsimile telegraphy a reality. After reviewing what the tour held in store for us, Mr. Marshall made the statement that the company's progress is continuing and that management shares the present optimism of American business generally and believes 1955 will be one of the busiest and best years.

FACSIMILE

Among the most impressive sights we saw during the tour were the new uses that Western Union had developed for the world's newest communications method, Facsimile. For example, the electronic messenger called Desk-Fax, installed right on the desk of the businessman, enables him

to send telegrams and cablegrams instantly simply by pushing a button. By the end of the year nearly 30,000 Desk-Fax machines will be serving industry throughout the country.

We learned that Western Union is vigorously promoting the leasing of Facsimile systems for customers' use. These Facsimile systems, known as Intrafax, open new avenues of speed and economy for industry in the internal handling of a wide variety of communications among departments, branches, and offices.

INTRAFAX

Intrafax transmits an exact replica of the original communication, eliminates keyboard transmission, and accommodates material never before susceptible of telegraphic and telephonic transmission. Perfect reproduction of standard-size letters or any other written, typed, printed, or pictorial matter is reproduced in less than three minutes.

TICKETFAX

Another interesting recent development is Ticketfax. With this system, central railroad reservation bureaus can send tickets in picture form to distant branch stations ready for instant use by customers at the counter. This system is already in use by the Pennsylvania Railroad and the New York Central.

The bank-wire system is fascinating. It is one of the Nation's largest private-wire systems, with the central communication center in Western Union's building.

SERVES 200 BANKS

This serves 200 banks from coast to coast over a 25,000-mile net work. Expanding use of this system has become an important new revenue source for the company, as these revenues are now running at the rate of more than \$25 million annually, and are second only to message service as a revenue source.

The company conducts a wide program of scientific development and research activities which we witnessed, promising the company's future developments in their communications techniques.

THE W.L. Maxson
CORPORATION


460 West 34th St., N.Y. 1, N.Y.

Notice of
QUARTERLY CASH DIVIDEND
10¢ a share*

Payable June 1, 1955
Record date, May 19, 1955

*On March 24, 1955, the capital stock was split two-for-one. This dividend is on the currently outstanding 697,194 shares.

April 28, 1955



ALLEGHENY LUDLUM
STEEL CORPORATION
Pittsburgh, Penna.

At a meeting of the Board of Directors of Allegheny Ludlum Steel Corporation held today, May 19, 1955, a dividend of fifty cents (50¢) per share was declared on the Common Stock of the Corporation, payable June 30, 1955, to Common stockholders of record at the close of business on June 1, 1955.

The Board also declared a dividend of one dollar nine and three-eighths cents (\$1.09875) per share on the \$4.375 Cumulative Preferred Stock of the Corporation, payable June 15, 1955, to Preferred stockholders of record at the close of business on June 1, 1955.

S. A. McCaskey, Jr.
Secretary

SOUTHERN
NATURAL GAS
COMPANY
Birmingham, Alabama

Common Stock Dividend No. 65

A dividend of 40 cents per share has been declared on the Common Stock of Southern Natural Gas Company, payable June 13, 1955 to stockholders of record at the close of business on May 31, 1955.

H. D. McHENRY,
Vice President and Secretary.
Dated: May 7, 1955.

TRIP
A*International
Business Machines*

CONVERGING ON TRACK 35 at Grand Central Station at 8:05 A.M., May 12, about one hundred early rising security analysts from all parts of the country picked up "Think" pads with their names imprinted on the cover and boarded the train for Poughkeepsie, New York. This marked the beginning of the field trip to the plant of International Business Machines at Poughkeepsie, a day that promised to be filled with interesting and intricate components and machines designed to simplify the handling of mass data.

MET BY IBM REPRESENTATIVES

Upon arrival at Poughkeepsie, the analysts were met by representatives of IBM and there boarded special buses, and traveled, accompanied by a police escort, through the historic town and to the modern plant of IBM. There we were greeted by the top-management team of the company, including Mr. Thomas J. Watson Jr., president of IBM, Mr. A. L. Williams, executive vice-president, and Mr. W. J. Mair, vice-president and general manager of the Poughkeepsie facilities.

MANUFACTURING TECHNIQUES

The analysts were then taken in small groups on a tour of the plant's operations and were shown examples of manufacturing techniques at IBM and given a close look at the inspection and testing areas for data-processing equipment. Of special interest was an automatic machine-tool operation designed by the Zagar Company, one of the many examples of automation that were shown to the analysts.

Climax of the morning's tour was a visit to the 702 data-processing center, where the IBM 702 digital computer was at work preparing the plant's 8,000-man pay-

roll. There the analysts also saw demonstrations of some of IBM's latest products, the high-speed sorter, the card-type, the transceiver, and demonstrations of new electric typewriters.

Luncheon was served at the company's spacious country club, the facilities of which are available to all employees of the company and their families. Vice-president W. J. Mair opened the luncheon talks and gave the visitors a brief history of IBM's manufacturing operations at Poughkeepsie.

IBM CARDS

J. W. Schnackel, vice-president of manufacturing, then described the company's other manufacturing plants and discussed in detail the manufacture of IBM cards. Mr. Watson summed up the reason for the company's success when he stated: "The most priceless ingredient of IBM is our reputation."

He then cited the company's dynamic achievements in the field of electronic data processing, pointing to the future and the vital role planned for transistors in the computers of tomorrow. Research is an important consideration in IBM's operations, and Mr. Watson stated that the company spends about 3% of gross revenues on research and development.

After lunch, the group visited the research laboratories and was shown a new film produced by the company, "Direct Line to Decision." This film shows how data-processing machines provide the answers to the many problems of business management and features the company's new 702 electronic data-processing machine along with other types of equipment.

Also, the film presents a lengthy explanation of the newest aid to mnemonics, ferrite memory cores, and depicts the role that they will play in digital computers. As a climax to the day, the analysts toured the laboratory, where they talked with engineers about some of the engineering problems on which they were working.

It was not difficult to understand why International Business Machines is the undisputed leader in the office-equipment industry after a field trip such as that one, and, as one analyst mentioned upon boarding the train, "After what I have seen today, I would like to come back and spend a month just visiting the Poughkeepsie plant and research laboratory."



Photo by Lancaster Greene

Analysts tour IBM facilities at Poughkeepsie.

*Laurence M. Marks & Company.

TRIP
B

New York Central

DESPITE THE EARLY HOUR of departure (7:30 A.M.) from Grand Central, 200 analysts trooped on to the New York Central's special train. Willard F. Place, vice-president—finance, Aloysius Laskowski, general manager—lines east, and E. R. Ahlborn, general eastern passenger agent, were our New York Central hosts on a beautiful, sunlit trip up the Hudson to Schenectady and return.

NATION'S SECOND LARGEST RAILROAD CARRIER

The lovely Washington Irving country and the grim battlements of West Point sped by the window of our two diners as we enjoyed a delicious breakfast. After this pleasant interlude, Mr. Place and Mr. Laskowski took over the microphone in the observation car to tell us about the progress being made in the present tremendous effort to rehabilitate the property and earnings of the Nation's second largest railroad carrier. An intensive question-and-answer period followed these talks.

On our return trip, as the setting sun gilded the lordly Hudson, we relaxed in comfortable informality over a fine dinner to watch the fleet of westbound fliers, the *Twentieth Century*, the *Comodore Vanderbilt*, and others, roar by. The arrangements throughout the trip were beautifully handled by all the New York Central team, and the analysts owe them a debt of gratitude for a job well done.

The highlights of the morning discussion period follow:

The previous management estimate had been that net income for the full year 1955 would approximate \$36 million (\$5.58 per share), but this has now been raised to \$40 to \$45 million (\$6.20 to \$6.98). (Because of large tax savings from five-year amortization and property and equipment retirements, the New York Central's net income can reach \$45 to \$46 million without payment of any income taxes.)

\$20 MILLION FROM SALE OF SCRAP

This railroad will realize about \$20 million from the sale of scrap this year. Permission has just been received to remove two tracks of the four-track main line of 185 miles between Buffalo and Cleveland. At estimated annual saving of \$1,200 per track-mile in maintenance and \$400 to \$500 in taxes, this removal would produce total savings of \$600,000 per year (9 cents per share before taxes).

The remaining two-track line between Buffalo and Cleveland will be protected by a \$6 million CTC installation, which is expected to pay for itself in six years. One track of the two-track West Shore line of 142 miles between Weehawken and Albany will be taken up if abandonment of passenger service is allowed by the state and

Federal regulatory authorities. Removal of one track is being considered on the Poughkeepsie-Tarrytown (48 miles) and Syracuse-Lyons, New York (45 miles), segments of the New York-Buffalo main line.

In conjunction with General Railway Signal, the company is considering the installation of CTC on the Albany-Boston line (200 miles) and the taking up of one of the two present tracks. After the Boston & Albany study, consideration will be given to putting in CTC and eliminating two tracks on the main line between Syracuse and Rome, New York (39 miles), and one track between Windsor, Ontario, and Buffalo (249 miles), and Niles, Michigan, and Kensington, Illinois (80 miles).

A total annual savings of \$2.5 million (39 cents per share before taxes) is being realized on the lines east of Buffalo through abandonment of freight houses, rearrangement of passenger trains, discontinuance of baggage trains, and consolidation of dispatching facilities. Total payrolls will be cut \$4.5 million (70 cents per share) in 1955.

Thus far, 45 stations have been closed, 18 more applications are pending, and 67 more stations are under study. The 1956 budget provides for the consolidation of 7 yards at Buffalo at a cost of \$4 million, thereby releasing 56 acres for industrial purposes.

A yard study is also being made at Detroit, where the Chesapeake & Ohio is running freight trains through the New York Central's tunnel to Windsor, which produces an annual revenue of \$2 million to the latter. Other studies are going forward on the possibility of joint operations with the C&O in Michigan, mechanization of mail-handling facilities at Boston, and use of the Illinois Central passenger station in Chicago.

FREIGHT CARS

Freight cars are being repaired at the rate of 50 a day, and the bad order ratio has been reduced to 6.7% (under 5% for boxcars). The number of steam locomotives has been cut from 923 at the close of 1953 to 260 to 270 at present.

The company will retain the fee on any sale of its Grand Central Terminal real estate, which remains under the lien of the New York & Harlem and New York Central & Hudson River mortgages. The obsolete baggage room on the Grand Central 43rd to 45th Street property may be torn down to make way for a new building, and the 270 Park Avenue property will be developed.

Working-capital position on April 30 compared as follows with the same date a year ago (millions):

	4-30-55	4-30-54
Cash & temporary cash investments	\$66.5	\$31.4
Materials & supplies	45.5	62.7
Net working capital	55.0	31.9

*Hallgarten & Company.

TRIP
C

General Electric

SOME 200 ANALYSTS, a number of them accompanied by their wives, took advantage of the opportunity to inspect plant facilities at General Electric's huge Schenectady works as part of the Convention program. Upon arrival, after a relaxing ride up the Hudson on the New York Central, the group, divided into two sections for ease of handling, was taken by bus to the plant. With everyone provided with safety glasses, first stops were the turbine-generator building and the medium induction motor plant.

The former, a \$30 million installation covering 22 acres, is 650 feet wide and over 1,400 feet in length. Output in 1954 approximated 7 million kilowatts of generating capacity.

NINE MACHINERY BAYS

The plant has nine machinery bays, ranging in width from 60 to 80 feet, paralleled by center aisles, providing for a unidirectional flow of materials. First impressive view from the visitors' balcony overlooking the main assembly bays four stories below made one sense immediately that here, indeed, is "heavy industry." The floor inspection tour which followed considerably strengthened the impression.

GIANT ROTORS AND STATORS

Giant rotors and stators, which later become 200-ton generators, were seen in various stages of production, winding, assembly, and testing. Turned out by a multitude of mammoth machines serviced by equally gigantic materials-handling equipment, the end product of this truly "large-scale operation" is a combination of power—a single turbine bucket less than two inches long delivers as much power as a bulldozer engine—and precision manufacture rivaling the watchmaker's art.

After a lunch tastefully and expeditiously served at the GE Athletic Association clubhouse, the tour resumed, turbine-

plant viewers proceeding to building 85, the medium induction motor plant. Here the group saw the company's new triclاد 55 motor being produced in the Nation's most modern factory. From the initial stator-rotor punchings through successive stages of welding, annealing, core plating, casting, winding, testing, and final assembly, the smooth functioning of this highly automated and instrumented straight-line production operation was especially noteworthy.

\$13 MILLION EXPANSION

At Rice Hall, the full group met to listen to brief comments on turbine-generator and induction-motor operations by Vice-presidents James M. Crawford and Glenn B. Warren. After a question-and-answer period, the group then drove to the research laboratory, where a \$13 million expansion is in progress. In the auditorium of this facility Dr. C. Guy Suits, vice-president and director of research, and his colleagues discussed the work of the laboratory and answered questions pertaining to the company's activities in atomic energy, chemistry, physics, and electronics.

PLANTS AND PROCESSES

As he left the auditorium to make his way down a rustic path to the waiting train, each visitor was thoughtfully presented with a plastic case containing literature describing the plants and processes he had seen. Looking back at the completely modern laboratory buildings in their beautifully landscaped setting on the knolls overlooking the Mohawk River, many a worker in the canyons wished his field had been chemistry or physics instead of whatever it is that security analysts choose to major in during their more plastic years.

Never in the memory of this inveterate plant tourist was a tour so well planned and efficiently conducted. To GE's Glenn Saxon, who labored indefatigably to make it the rewarding experience it was, well-deserved praise for a top-drawer public relations effort.

*Riter & Company.

(Concluded from preceding page)

Additions and betterments will range between \$25 million and \$30 million this year, while the excess of five-year amortization over normal depreciation charges will be about \$16 million annually over the next three years, indicating a tax savings of \$8 million (\$1.24 per share) at a 50% rate. This excess amortization will then drop to \$5.7 million in 1958, based on present certificates of necessity. Maturities of bond issues and equipment trust obligations in 1955, including those due January 1, 1956, will amount to \$46 million.

Even though maintenance and car shop employment is now at a seasonal peak, total employment has been reduced to 78,000 from 94,000 to 95,000 a year ago and 104,000 to 105,000 two years ago, and should average 70,000 over a period of time. (The average annual wage is \$4,700 per employee). Maintenance of way work is now 100% mechanized on the main line. The New York Central is the largest railroad user of IBM equipment at the present time—a \$650,000 machine to be delivered in July will eliminate 320 clerks, and three more machines are on order.

The ANALYSTS JOURNAL

PUBLISHED BY
THE NATIONAL FEDERATION OF
FINANCIAL ANALYSTS SOCIETIES, INC.

Contents

Articles and transcripts of speeches of particular interest to
Security Analysts.

Publication Dates

The Analysts Journal is published in February, May, June,
August, and November.

Subscription Rates

\$5.00 per year in the United States.

\$5.50 (in New York funds) per year outside the United
States.

Individual Copies

\$1.50 in the United States.

\$1.75 (in New York funds) outside the United States.

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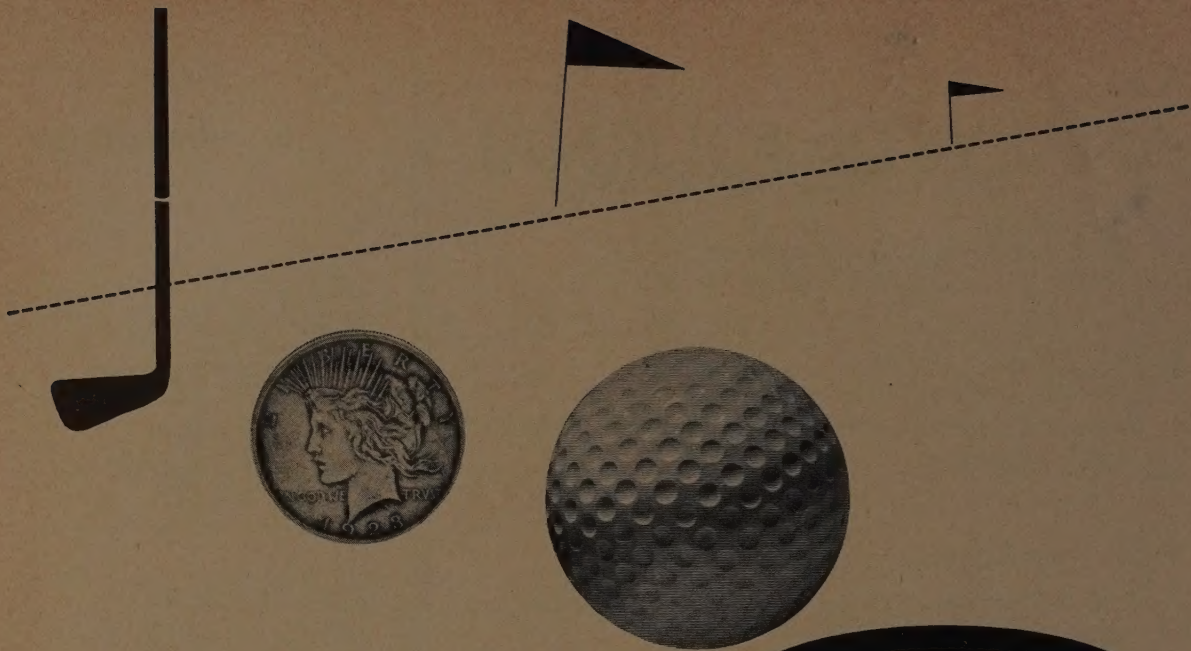
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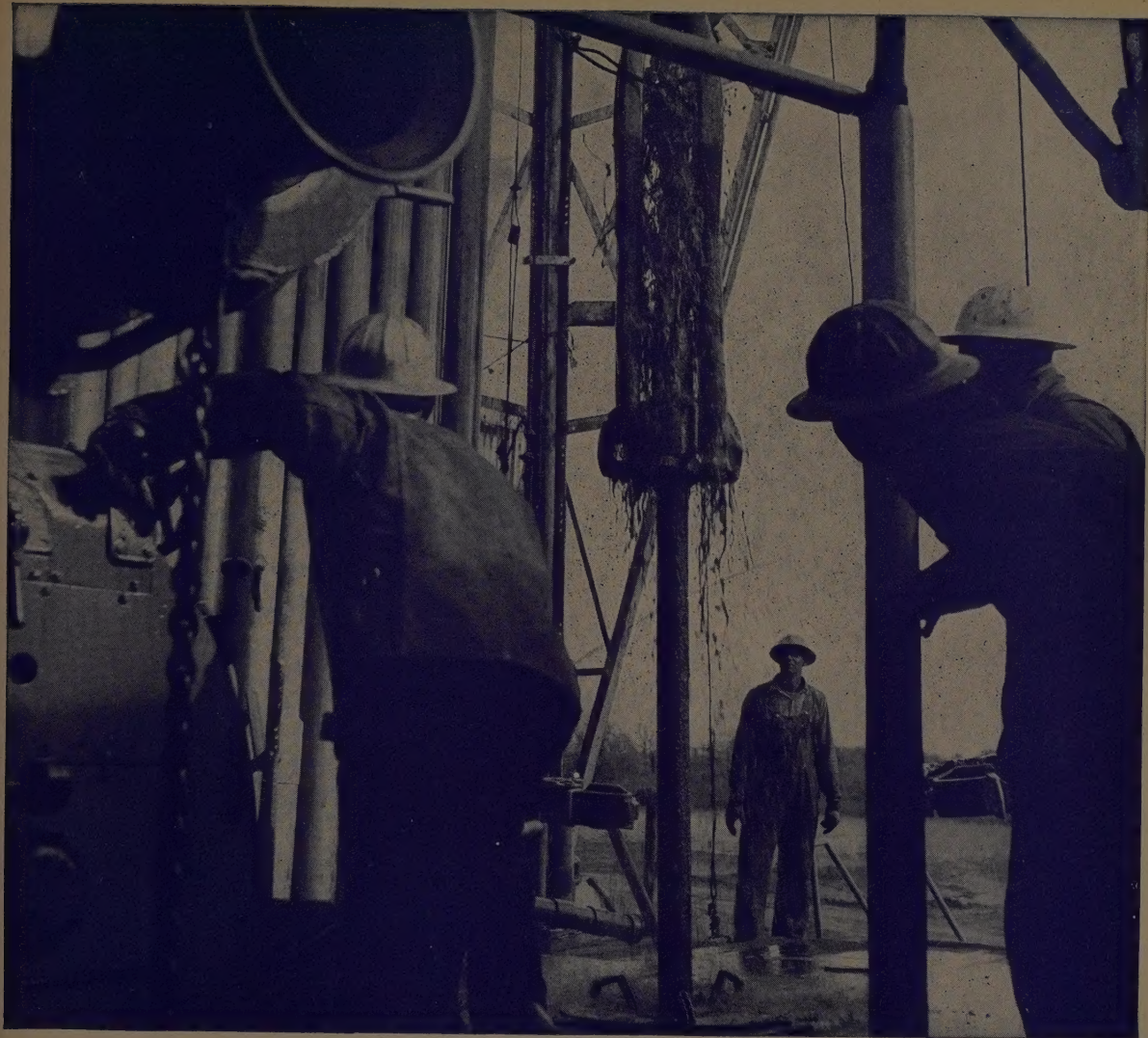
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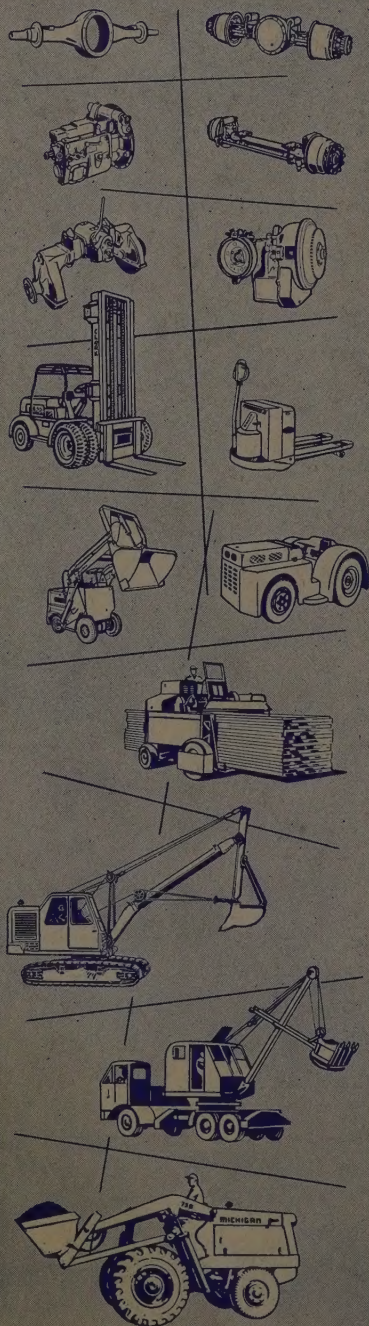
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